THE NEW YORK

JOURNAL OF MEDICINE

FOR SEPTEMBER, 1857.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I—*Puerperal Fever; its Causes and Modes of Propagation.** By JOSEPH M. SMITH, M.D., Professor of Materia Medica and Clinical Medicine in the New York College of Physicians and Surgeons, Physician to the N. Y. Hospital, etc., etc.

IN glancing over the literature of puerperal fever, it is seen that physicians have been divided in their views concerning the pathology of that disease; some holding the opinion that it is an idiopathic fever, *sui generis;* others regarding it as essentially a local inflammation, taking the form of peritonitis, metritis, metro-peritonitis, or uterine phlebitis. Of late, the former of these opinions, with the exception of so much of it as imputes to the disease a specific attribute, has received the support of numerous able contributors to obstetric pathology. In fact, so generally is this view of the disease entertained at present, that Professor Simpson remarks, that the evidence on which it rests, "has induced of late, most of our best pathologists to reject the idea that puerperal fever is an idiopathic fever, *sui generis*, or a disease originating in, or identical with, peritonitis, or any other local inflammation."†

But while it is generally admitted that puerperal fever is not a disease, *sui generis*, it is nevertheless regarded as an idiopathic fever, assuming a peculiar malignant form, being one of a

* This paper was read before the New York Academy of Medicine, at the opening of the discussion on puerperal fever, on the 4th of April, 1857, and is now published by consent of that body.

† *Obstetric Memoirs and Contributions*, vol. ii. page 23, Phil., 1856.

group of febrile affections which originate, for the most part, from similar local conditions, and which have for their primary and essential pathological element a poisoned state of the blood. The forms of disease associated with puerperal fever, and which mainly constitute the group of disorders referred to, are typhus, and its modification typhoid fever, erysipelas, and hospital gangrene. That these are congeneric affections, and due to a common tœxæmia, seems evident from the fact, that they occur in situations in which a subtle poison, the ochletic miasm of Dr. Gregory, is generated and diffused in the air, and which finding its way into, and contaminating the blood, produces constitutional and local phenomena, varying in form and character, according to certain morbid predispositions of the system existing at the time of its reception into the circulating fluid.

In respect to the nature of the morbific agent which ordinarily produces malignant puerperal fever, there are two leading opinions, viz.: 1. That it is a specific contagious principle, elaborated within the body by a specific vital process, an opinion correlative with that of the disease being a fever, *sui generis*. 2. That it is a poison formed by the chemical reactions which take place in the exhalations and other matters excreted or discharged from the human body, and which, usually existing in an aeriform state, is denominated, in reference to its source, *idio-miasma*.

Now, in rejecting the opinion that puerperal fever is a disease, *sui generis*, the idea of its propagation by a specific contagion is, also, of necessity repudiated. Yet, that the disease is communicable is unquestionable; but it is so through the agency of a poison generated in a mode totally different from that in which the specific contagions, as those of small-pox and measles, have their origin. Such a poison is *idio-miasma*.

With these preliminary observations on the general pathology of puerperal fever, we proceed to the study of the *special etiology* of the disease; and in order to exhibit the facts pertaining to the subject, and to illustrate their relations to one another in an analytical and methodical manner, we shall arrange them under different heads.

1. *Sources of puerperal fever in public institutions.*—If we inquire into the conditions in which epidemic puerperal fever, most frequently originates *de novo*, we shall find it occurring among lying-in women crowded in ill-ventilated wards, and surrounded by impurities emitted from their own bodies. Such occurrences rank the highest among the evils of which a defective system of hygiene in public institutions is productive. Examples of this kind have their record in the history of our

own alms-house ; and similar ones are registered in the annals of many of the larger lying-in establishments in this country and Europe. "I have seen," says Copland, "puerperal fever generated in the wards of a lying-in hospital from the air having become vitiated by the discharges, and nearly all the females who have been exposed to the contaminated air soon after delivery, affected by it."* In noticing the causes of the disease, Professor Simpson says it is produced "by the morbific air generated in a small ill-ventilated ward or hospital, crowded with puerperal patients."† Other evidences of the same general fact might be cited and multiplied to an extent not required by the rules of inductive reasoning to illustrate a scientific truth.

Now, the conditions in hospitals above referred to, produce an infectious, or *idio-miasmatic*, atmosphere, but never, to allude again to the doctrine of contagion, a puerperal fever poison, *sui generis*. The poison occurs in the lying-in wards, anterior to the development of a single case of the disease. If the poison were a specific contagion, how, or where did it originate? Certainly not in the bodies of the puerperal women, prior to the outbreak of the malady ; for, in their ordinary state, after delivery, they are as incapable, of engendering a febrile contagion as they are of producing the variolous or morbillous contagion. But it may be said that a specific puerperal fever poison, is introduced in a lying-in ward, from a foreign or outside source. In most instances, not the slightest evidence can be adduced in favor of such importation.

That *idio-miasma* is the ordinary and primary efficient cause of puerperal fever, and that this disease is not its exclusive product, is demonstrable by the relations of the malady to other forms of disorder, which occur and prevail in similar circumstances in the same hospitals, such as typhus, erysipelas, etc. These relations, in an etiological point of view, it is our purpose to illustrate.

But here the inquiry arises—In what phenomena do puerperal fever and typhus correspond in their etiology? A prominent and significant fact in the history of these diseases is, that they frequently occur promiscuously in crowded and ill-ventilated hospitals. Such we are told was the case in the lying-in institution, at Vienna, in 1819. The puerperal fever, "was attended with such uncommon mortality that an investigation was ordered by the Government"—"one fact, worthy of notice, is stated that, although in the institution it was so

* *Dictionary of Practical Medicine*, Art.—Epidemics.
† *Obstetric Memoirs and Contributions.*

general and mortal, not a single case occurred in the city"—"hospital gangrene and typhus fever were prevailing in the institution at the same time."* Occurrences of this kind in hospitals, in the absence of all evidence of a contagious principle having been introduced from without, distinctly indicate that puerperal fever and typhus arise from a common source. It is true, these distempers do not always coexist epidemically in hospitals, but why they do not we shall attempt to explain in the sequel. The two diseases are not *essentially* dissimilar, but are cognate affections. Both maladies furnish effluvia of the same properties, and consequently are capable of producing each other. The proofs of this statement are numerous and conclusive, of which we shall present some of the more select and striking.

2. *Origin of sporadic, or spontaneous, puerperal fever.*—Hitherto we have regarded the agent producing puerperal fever as generated in hospitals, and existing in an aeriform state. But in studying the etiology of the disease, it appears that primary cases sometimes occur which evidently have not originated from an *idio-miasmatic* atmosphere. Such cases are in most, if not in all instances, referable to a poisonous principle, possessing the essential febrific properties of *idio-miasma*, and which is sometimes present in the putrescent fluids discharged from, or lodged in, the uterus and vagina of lying-in women. These fluids are absorbable, and consequently may act as the efficient cause of the disease, especially if an epidemic meteoration exist favorable to the prevalence of the malady. Moreover, when such offensive discharges occur, it is probable that *idio-miasma* is frequently generated from them; and that this poison not only affects those from whom it emanates, but sometimes induces puerperal fever, typhus, or erysipelas in others exposed to its influence.

This view of the origin of isolated instances of malignant puerperal fever is in accordance with the observations of some of the ablest writers on the subject. Dr. Rigby remarks, "we have long been convinced that one of the sources of puerperal fever is the absorption of putrid matters furnished by the coagula and discharges which are apt to be retained in the uterus and passages after parturition—a view which has been adopted by Kirkland, C. White, and other older writers."† Dr. Moore concludes from his collection of facts, "that sporadic or spontaneous puerperal fever arises from the decomposition of a

* EIGHTS on Puerperal Fever—*Trans. of Med. Soc.* of the State of N. Y.

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3. *Modes of propagation of puerperal fever.*—There are no facts in the history of malignant puerperal fever which have more impressively engaged the attention of the profession, and, at the same time, attracted the notice of the community, than that the disease does not often occur promiscuously among the puerperal patients of physicians generally; but that it appears mostly in a series of successive cases in the practice of one or two, or, at most, a few physicians and midwives. The following examples strikingly illustrate this well-known truth. Dr. Armstrong states that, of the forty-three cases that occurred in Sunderland and two adjacent parishes, in 1813, forty occurred in the practice of Mr. Gregson and his assistant, Mr. Gregory.‡ Dr. Lee states, on the authority of Mr. Roberton, of Manchester, that "from December 3, 1830, to January 4, 1831, a midwife attended thirty patients for a public charity; sixteen of these were attacked with puerperal fever, and they all ultimately died. In the same year, three hundred and eighty women were delivered by midwives for the institution, but none of the other patients suffered in the slightest degree."§ Dr. Gooch says, "that a practitioner in large midwifery practice lost so many patients from puerperal fever, that he determined to deliver no more for some time, but that his partner should attend in his place. This plan was persevered in for a month, during which time not a case of the disease occurred in their practice. The elder physician, being then sufficiently recovered, returned to his practice, but the first patient he attended was attacked by the disease and died."‖ A similar incident, though after a shorter retirement from obstetrical practice, happened to Dr. Rutter, of Philadelphia.¶ Occurrences of the kind here ad-

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verted to, are not uncommon in our own, as well as in other countries; and to account for them, recourse has been had to the theory of contagion; agreeably to which theory, it is supposed that a specific poison, generated by puerperal fever patients, is transmitted, through the clothing of the professional attendant, from such patients to women who are in labor, or in the puerperal state. Though there is good reason to believe that every case in private practice does not arise from a poison conveyed to the patient from a foreign source, yet, that the disease is, in very many instances, produced in this way there is abundant evidence. But that the poison is not a specific contagion, produced exclusively by puerperal fever patients, a poison, *sui generis*, capable of inducing no other form of disease than puerperal fever, is apparent from the histories of numerous cases on record. On examining these cases, it is found that the poison communicated was sometimes derived from puerperal fever patients, sometimes from erysipelatous patients, and, in some instances from other sources. These facts, while they militate against the specific contagiousness of the disease, go to prove its idio-miasmatic origin.

The property by which the specific aeriform contagions are enabled to attach themselves to substances surrounding the persons from whom they emanate, is not peculiar to that class of poisons; it belongs also to vitiated human effluvia, or *idio-miasma*. As this poison readily adheres to clothing and other articles, it may be transported from one habitation to another. It is in this way that physicians, while attending on puerperal fever cases and other patients, from whose exhalations and other discharges idio-miasma is generated, convey the poison to the homes of lying-in women.

If puerperal fever were invariably produced by a poison derived from patients laboring under that disease, there would be less reason to question its specific nature and contagiousness. That such patients are frequently, and, perhaps, generally, the source of the poison, there is no doubt. Gordon says, that though most of the cases that came under his care occurred among the lower classes, yet, "women in the higher walks of life were not exempted, when they happened to be delivered by a midwife or physician who had previously attended any patients laboring under the disease."*

But the media of communication of the agent producing puerperal fever, are not only fomites, such as clothing, etc., but the hands of obstetricians recently imbrued or tainted with morbid or putrescent animal matter; and W. Tyler Smith sug-

* *Treatise on the Epidemic of Puerperal Fever of Aberdeen.*

gests another medium through which, he thinks, the poison may be propagated. After remarking that "the clothes, hair, and touch of the person exposed to the poisonous influence have been supposed to be the chief means of infection and contagion," he says, "but very remarkable cases are on record, such, for instance, as when the accoucheur has shaved his head, changed the whole of his clothes, cleaned himself by hot baths and vapor baths, and soaked his hands in disinfecting solutions, and yet he has taken the malady about with him." And he adds, "I believe that in such cases the blood of the person acting as the medium of infection is affected, and that by the breath a certain halitus, or infectious influence, is given out, which acts upon the blood of the puerperal woman through the lungs, and thus conveys to her system the germs of the disease." The arguments adduced in support of this opinion are ingenious and worthy of consideration. "If we attend a post-mortem," he says, "when the smell is peculiar, if we spend some time in a lying-in room where the odor of the lochia is very strong, or, if we go into any very powerful smell, the taint evidently enters the body by means of the lungs, and can be perceived subjectively by the taste or smell, or its odor can be distinctly perceived in the saliva or eructations from the stomach, or in the urinary, cutaneous, and other secretions." In this mode, Dr. Smith supposes the blood of a practitioner may become infected by exposure to the puerperal fever poison, and that he may impart it to puerperal women.*

But as we have said before, puerperal fever may be produced by the miasms of other forms of disease, of which some of the more common we now proceed to notice.

4. *The miasm of typhus fever produces puerperal fever.*—This proposition is established by the following examples, cited by Mr. Ingleby, in his interesting paper on puerperal fever. "Dr. Collins, having made an allusion to the case of two women who died of puerperal fever, and occupied beds adjoining that of a woman who died from a bad form of typhus with petechiæ, makes the following remark:—In October, 1827, when I was resident as master, an occurrence precisely similar took place. A patient in typhus fever was admitted at night in one of the labor wards, where she remained for some hours. The ward contained four beds. The three women occupying the other beds were attacked with puerperal fever, of whom two died."†

Dr. Simpson states that "some accoucheurs believe in the

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* *Lancet*, November 8, 1856.

† Edin. *Medical and Surgical Journal*, April, 1838.

possibility of the imbibition of the effluvia from typhus or puerperal fever patients by the clothes of the medical attendant, and that the subsequent inhalation of such matter, by the parturient female, might be a means of artificially infecting that female with disease."*

As an instance of the production of puerperal fever by the typhus poison, communicated by the medical attendant, W. Tyler Smith, accoucheur to St. Mary's Hospital, tells us that a practitioner had been attending cases of typhus fever, and that "within the space of five days he delivered five women. All these women were attacked with puerperal fever, and all of them died. This was in a country practice, and the cases were remote from each other. Different practices intersected the practice of this medical man at various points, but no other cases were known to have occurred in the neighborhood."†

The following case is expressly recorded by Mr. Humble to illustrate the origin of puerperal fever from the poison of typhus. He was requested to visit Mrs. L., æt. about fifty, on September 17, 1841. She had been under treatment for two or three weeks, and continued to labor under pure typhus in a very severe form. "The teeth and lips were covered with black sordes; the tongue dry and black; the most complete prostration; fæces passed involuntarily; low muttering delirium; in fact, for some time, life was only continued by the constant use of wine, strong beef tea, quinine, etc." The woman finally recovered. Among her attendants was her daughter, who had nearly or quite completed the ninth month of utero-gestation. "Besides waiting on her mother, she at night generally lay down on the same bed by her side." "On the 22nd of September, she had been waiting on her mother as usual, at which time her mother was at about the worst, and at night, while so engaged, the pains of labor came on." After giving some further details, and remarking that the most offensive and putrid exhalations proceeded from the mother, he tells us that, "feeling confident that it was next to impossible that she should escape a severe attack of puerperal fever, I watched the case most anxiously. The first two or three days passed tolerably well, but ere long the dreaded symptoms showed themselves. I had left directions to be sent for at any hour of the day or night, on the occurrence of any alarming symptoms; but some hours were allowed to elapse between their first appearance and my being acquainted with the fact. I found, on visiting her, that puerperal fever had, indeed, set in. There

* *Obstetric Memoirs and Contributions*, vol. ii., p. 40. Phil., 1856.
† *Lancet*, Nov. 8, 1856.

was the most intense pain over the abdomen, not confined to one particular spot, and excessively increased on pressure; constant vomiting; rapid, rather small pulse; faintness; great pain in sinciput; tongue becoming covered with white, greasy fur; countenance very anxious. These were the chief characteristic symptoms." Under a course of active treatment by bleeding, leeching, calomel, and opium, etc., the woman recovered.*

The above cases afford decisive proof of the origin of puerperal fever from the typhus miasm.† It is to be noticed, however, that there are those who deny the similarity of the typhus and puerperal fever poisons. Thus, Gordon says, "the contagion producing typhus is not only of a different nature from that which produces puerperal fever, but the diseases thereby occasioned have very different symptoms. The principal symptom of puerperal fever is pain in the abdomen, whereas the principal symptom of typhus is pain in the head, without any complaint in the abdomen." He illustrates the difference in question by a case related by Dr. Kirkland. A puerperal woman was put into the bed from which her sister, affected with a slow nervous fever, had been removed. In consequence of this, she sickened, and her disease assumed the usual form of typhus, of which she died on the twelfth day. Now, Gordon infers that, as the disease in this instance was not developed in the form of puerperal fever—that is, with "its principal symptom," pain in the abdomen—it was not that disease, but typhus, and, therefore, that the poisons of the two diseases are different. But this broad inference is not sustained by the facts of the case; they merely prove that, in this particular instance, the typhus poison produced typhus in its ordinary form, and not malignant puerperal fever. Such a case, and a hundred like it, does not, in any degree, invalidate the conclusion drawn from the facts relating to the origin of the cases recorded by Collins and Humble. In truth, the cases related by these gentlemen, together with that just noticed, as cited by Gordon, distinctly show, that the effect of the typhus miasm on puerperal women is variable, sometimes appearing in the form of ordinary typhus, and sometimes—and this appears to be by far the more frequent—in the form of malignant puerperal fever.

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* *Lancet*, July 9, 1842; and Braithwaite's *Retrospect*, Part 6.

† To the authorities already cited in support of the opinion of the common origin of the diseases in question, may be added that of Professor Murphy. He remarks in a paper on *Puerperal Fever*, read before the Epidemiological Society of London (March 2, 1857) that "the puerperal poison seems a contrast to the typhus poison, which destroys fibrin; yet, the typhus poison, absorbed by a parturient patient, will cause puerperal, not typhus fever."—*Lancet, March* 28, 1857.

As to the opinion that typhus is incompatible with puerperal fever and the puerperal state, so confidently expressed by Rokitansky, it is clearly erroneous—being founded on the assumption that the typhus poison always produces a disease marked by uniform and definite phenomena. It is alleged that "the *typhus abdominalis, i.e.*, with formation of the characteristic typhus matter, and which by Rokitansky is always understood under the name of typhus, is excluded by the various forms of puerperal fever. In two hundred cases of puerperal fever, he did not find one complication of the typhus process. This immunity from typhus," it is added, "is given by the pregnant state, child-bed, and even, though in a less degree, by suckling." *

There is nothing in these statements irreconcilable with the deduction that puerperal fever arises from the typhus poison. The differences in the anatomical lesions of puerperal fever and typhus, do not prove a diversity of causes. The anatomical changes in puerperal fever are referable to that adventitious condition of the system which is peculiar to the puerperal state, and which predisposes to forms of anatomical alterations, to which there is commonly no tendency in persons who are the ordinary subjects of typhus fever. That this is a just view of the subject is evident from the fact that the peculiar predisposition of puerperal women alluded to, does not exist, in every case, to an extent sufficient to exclude the occurrence in puerperal fever of dothinenteric lesions, or what Rokitansky calls a "complication of the typhus process." Stewart says, "it was but yesterday that I saw at M. Barth's rooms large elliptical patches of ulceration in the jejunum of a female who died of *puerperal fever*, with rupture of the uterus and peritonitis—ulcers which, had they been found in a patient who had presented the ordinary symptoms of typhus, would certainly have been looked upon as characteristic of the disease. "Is then," he pertinently asks, "the puerperal fever identical with the typhoid affection?" † Dr. Wilson, in his notice of a malignant epidemic which prevailed in the lying-in department of the Philadelphia hospital (Blockley), in March and April, 1842, states, that in a black woman, that died of the disease, "the mucous membrane of the intestines was injected more than usual, particularly at the cœcal extremity of the ileum. The glands of Peyer were ulcerated, and presented

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* Fletcher's *Elements of General Pathology.* Edited by John J. Drysdale, M.D., and John R. Russel, M.D., p. 146.

† Edin. *Med. and Surg. Jour.*, October, 1840, p. 329.

an appearance very similar to what we meet with in typhoid fever."*

But there is further proof that the phenomena of typhus appear with those of puerperal fever, in the same patient. Thus, puerperal fever, besides exhibiting some of the common anatomical lesions of typhus, occasionally occurs with some of the more striking external features of this disease. "That the fevers of puerperal women," says Dr. Locock, "are much influenced by the character of the other fevers of the season was strikingly exemplified in the Westminster lying-in hospital during the spring of 1838, when some of the fatal cases were attended by *petechial eruptions*, precisely similar to the spotted fever (typhus), which was so prevalent at that time in the London hospitals."†

As the foregoing facts show that the miasm of typhus has the power of producing puerperal fever, so there is evidence to prove that the poison of puerperal fever is capable of inducing typhus.

5. *The miasm of puerperal fever produces typhus fever.*—That the poison of puerperal fever should produce typhus fever might be inferred, *a priori*, seeing that the poison of the latter is capable of producing the former disease. And that such is the fact is shown by the following evidence :—

Dr. Marsh tells us that "Dr. Johnson, professor of midwifery at the College of Surgeons, Dublin, informed him that he observed, in some instances, that the ward maids of the lying-in hospital caught typhus from the patients then affected with puerperal fever."‡ Walsh says, as quoted by Harty,§ that "in the Royal Infirmary of Edinburgh, the similarity of the cause was shown by the effects, as two of the attendants on the puerperal women were seized with the common synochus, and this was not a solitary instance, as in other places the same thing had likewise been observed." Substantially accordant with these statements are the more recent observations of W. Tyler Smith. He says, "a curious circumstance connected with the poison of puerperal fever is, that it may be communicated in other forms to the nurses or attendants, and even to males. The husbands of puerperal women may be attacked by sore throat, erysipelas, or typhus fever. Within the last few years,

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* Am. *Jour. of Med. Sci.*, No. 9, New Series, p. 245.

† Tweedie's *Library of Practical Medicine*, Article—Puerperal Fever. Dr. Kennedy, in his paper, *On the Spots observed in Fever*, says, "That large, dark petechiæ are not confined to typhus, but may be seen in puerperal fever and cases of malignant scarlet fever."—N. Y. *Jour. of Med.*, July, 1857—from Dub. *Hospt. Gaz.*

‡ Dublin *Hospital Reports*, vol. iv., p. 521.

§ *Observations on Simple Dysentery and its Combinations*, p. 332.

an accomplished physician-accoucheur of this metropolis was cut off suddenly by putrid fever, after examining a woman suffering from puerperal disease."*

6. *The miasm of erysipelas produces puerperal fever.*—That a connection exists between puerperal fever and erysipelas, is a fact not of recent observation. It is said by Mr. Ingleby, to have been noticed by Dr. Johnston in his inaugural Dissertation, published at Edinburgh, nearly sixty years ago ; † and Gordon says, "that the puerperal fever is of the nature of erysipelas, was supposed by Pouteau, forty years ago, and has been the opinion of Drs. Young and Howe, since that time." ‡ Later observations have confirmed the opinions of these respectable physicians, and at the same time, have shown that the two diseases are capable of mutually producing each other. A few examples, selected from a multitude, will suffice to illustrate this important truth.

Mr. Ingleby, in his able paper on puerperal fever, in addition to many interesting facts collected from the writings of various observers, gives three series of original cases in proof of the origin and propagation of puerperal fever from erysipelatous patients. The first series consists of seven cases ; the second of two ; and the third of seven. The cases, in each series, were distinctly traceable to a poison, communicated by the accoucheur who, a short time previous to being called to them, had been engaged in attending erysipelatous patients, or opening erysipelatous abscesses. Of these sixteen cases, twelve proved fatal ; five in the first series, two, or the whole, in the second, and five in the third. The practitioners in attendance on the cases in the first and last series, after encountering such unfortunate results, prudently withdrew for a season from practice, and the disease ceased to occur. §

Among the instances, on record, of puerperal fever, induced by the idio-miasma emanating from patients affected with gangrenous erysipelas, there are few more striking than those related by Dr. Robert Paley. The cause of the disease, in these cases, was an effluvium from the diseased genital organs of a stout man, æt. 30 years, by profession a teacher of music, residing near Halifax, England. Dr. Paley tells us he saw this patient in consultation on the third day from the commencement of the disease, "when the whole of the scrotum and the penis had assumed a dark red color, with here and there a black gangren-

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* *Lancet*, Nov. 8, 1856.
† Edin. *Med. and Surg. Jour.*—April, 1838.
‡ *Treatise on the Epidemic Puerperal Fever of Aberdeen.*
§ Edin. *Med. and Surg. Jour.*—April, 1838.

ous spot, the tongue was dark colored, as in typhus, and the pulse indicated debility. In the progress of the disease "the whole of the scrotum, prepuce, and a considerable part of the penis sloughed off." The patient finally recovered. He further states that one morning, during his attendance, "while the surgeon was dressing the patient, the scrotum and the penis being in a gangrenous state, a messenger came to request him to go to a woman in labor, who resided about half a mile from our patient, and he obeyed the summons without loss of time. Four or five days after this, on meeting, he said, 'you will recollect that I was sent for to a woman in labor on such a day.' I replied, 'yes, and what of that?' 'She is dead, every thing seemed to be going on well until yesterday, when she was seized with a violent pain in the region of the uterus, and she died before I had time to do anything to relieve her.' In the course of two or three days, on meeting again, he said, 'it is very odd, Dr. Paley, I have lost another patient in the same unaccountable way as before;' and on the next morning, on meeting, he stated that he had another patient, about two miles off, seized in the same manner, whom he requested me to visit along with him. After seeing this patient, I told him she was laboring under puerperal fever; and before we left the house, he was sent for to visit another woman whom he had attended in labor in the same village. I accompanied him, and found her also the subject of puerperal fever. I believe he had in all, six cases of the disease." On inquiry, it appeared that cases of puerperal fever were not occurring in the practice of other physicians in and about Halifax. Dr. Paley says, "there is not the slightest doubt in my mind, that the surgeon, who was in attendance, was the means of communicating something (call it what you may) from the patient laboring under the disease of the scrotum to the lying-in women, which in them produced puerperal fever." He advised the surgeon to go from home for two or three weeks, and to have his clothes washed and fumigated, all which he did, and the disease ceased to occur. In connection with these facts, Dr. Paley states, that a married lady, after repeatedly visiting the woman first affected with puerperal fever, was seized with violent pain in the bowels, and died in twenty-six hours from the attack. He thinks that the disease in this case, was a species of enteritis, and originated from a poison derived from the puerperal fever patient, in question.*

The cases of puerperal fever, arising from an erysipelatous source, reported by Robert Storrs, Esq., of Doncaster, are es-

* Braithwaite's *Retrospect*, 1840, p. 65, from the *Med. Gaz.*, Dec. 6, 1839.

pecially deserving of notice. They present a body of facts which, in value and interest, are second to no others which have been published in relation to the etiology of the disease. The following is a condensed account of them:—

The first woman seized with puerperal fever, in the series of cases, attended by Mr. Storrs, was delivered on the 8th of January, 1841, and died on the 12th. The next two cases were delivered on the 13th, and died, one on the 17th, and the other on the 22nd. The fourth case he attended on the 24th, which recovered. On the 8th of the following month, February, another case occurred in his practice which recovered. On the 12th, he delivered a woman who died on the 16th. On the 19th, he visited a woman, a few hours after her delivery, who died on the 24th, and on the 24th, he delivered another who died on the 27th. It will be observed, that of these eight cases, two only recovered. From the 8th of January, the day on which he attended the first of the above cases, to the 25th of February, he delivered sixteen other women, all of whom did well. After the fatal issue of the first three cases, he changed his clothes, and did so again after the occurrence of another case, and subsequently used such precautions as he thought would prevent his spreading the infection. At length he resolved to leave home for a season, hoping to rid himself of a poison which he believed clung to his person. He accordingly left his practice on the 11th of March, and, after traveling on the borders of Wales, returned on the 16th, having again changed his clothes, and resorted to other means of personal disinfection. A few days after his return, namely, on the 21st, he delivered a woman, who sickened with puerperal fever at midnight on the 22nd, and died on the 25th. On the morning of the 22nd he attended another woman; she was seized with fever on the 25th and died on the 27th. The occurrence of these two cases, after an absence from home, and using every precaution, led Mr. Storrs to suspect that "some extra puerperal fever cause produced the mischief, and not a poison carried by him from one puerperal patient to another; and in this suspicion, he was strengthened by the opinions of his medical friends, Dr. Thompson and Mr. Reedall, of Sheffield. On investigation, the source to which the disease appeared to be clearly referable, was a case of gangrenous erysipelas of the leg and foot, of a stout, gross woman. Mr. Storrs had been called to this patient on the evening preceding his attending the first of his unfortunate cases. Among other particulars of the case, it is stated that, after it had lost its gangrenous character, a succession of abscesses formed, the last of which Mr. Storrs opened on the

morning he attended the last case but one. He says that "on the very day, or the day previous to having attended in labor, all the cases from the 4th to the 8th inclusive, except the 7th, I had opened an abscess, or dressed the wounds of this erysipelas case," and that "I had probably carried the *fomes* from it to every one of them." In the seventh case, there was a double exposure to a miasmatic poison. The woman had laid out a child, dead of gangrenous erysipelas, and had been called upon by Mr. Storrs, after her delivery. The eighth case had also been exposed to a probable source of the poison. She lay on the bed on which her husband had been recently confined with erysipelas and typhoid fever. It must be added, that after Mr. Storrs had transferred the charge of the erysipelatous patient to another practitioner, no other fatal cases of puerperal fever occurred in his practice, and that he had but one case which caused him any uneasiness. *

Among the numerous examples of puerperal fever occurring in the private practice of physicians in this country, which illustrate the origin of the disease from erysipelas, those reported by Dr. West, to the College of Physicians of Philadelphia, as related to him by Dr. Jackson, in whose practice they occurred while this gentleman was a resident of Northumberland County, Pennsylvania, are especially worthy of notice. Among other particulars in relation to two cases, which occurred two months after Dr. Jackson attended a series of seven cases, it is said, "that the house in which the first case of the disease occurred was filthy, almost beyond comparison; add to which," says Dr. Jackson, "I was attending and dressing a limb extensively mortified from erysipelas, and went immediately to the accouchment with my clothes, and the unfortunate gloves (worn while visiting former cases), most thoroughly imbued with the effluvia of that sphacelation. The erysipelas had been very prevalent for six months, and difficult to manage." †

Though the preceding cases, to which many similar ones might be added, abundantly establish the fact that the miasm emanating from erysipelatous patients produce puerperal fever, yet, in order to render the connection between these diseases still more striking, it may be well to notice some other facts which prove that the ability of one of them to produce the other is mutual. ‡

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* Am. *Jour. of Med. Sci.*, Jan., 1843, from the *Prov. Med. Jour.*

† Am. *Jour. of Med. Sci.* Oct., 1842, p. 417.

‡ For other cases of a similar character see New York *Jour. of Med.* Jan. 1853, p. 48.

7. *The miasm of puerperal fever produces erysipelas.*— In speaking of the connection of these diseases, in his account of the epidemic puerperal fever which prevailed at Aylesbury in the autumn of 1831, Mr. Ceely makes the following observations :—"That the two diseases had a common origin ; that the puerperal fever and the prevailing erysipelas were identical, and each capable of producing the other, was soon beyond a doubt, every puerperal case giving rise to numerous cases of the common epidemic in the persons of the nurse and attendants." * Mr. Ingleby states in connection with one of the cases of puerperal fever, described by him, that "the nurse was seized with violent erysipelatous inflammation of the throat." † Dr. Warrington mentions the case of a woman who was attacked with puerperal fever within forty-eight hours after confinement, and died on the fifth day ; and he tells us that "the nurse who attended upon this patient was attacked with violent erysipelas of the face and scalp a few days after, and died." ‡ Dr. O. W. Holmes in his paper, on the disease, states that the nurse who laid out the body of one of the puerperal fever patients, attended by Dr. C., "was taken, on the evening of the same day, with sore throat and erysipelas, and died in ten days from the first attack." §

But nurses and attendants are not exclusively the subjects attacked with erysipelas when exposed to the emanations of puerperal fever patients. Dr. Locock observes that the existence of erysipelas in hospitals, or among "the infants when the mothers have puerperal fever has been long noticed." ‖ "Similar facts," says Kneeland, "have been noticed at the hospitals 'de la Faculte' and 'Maternite' of Paris." ¶ It is remarked by Professor Trousseau, in reference to the erysipelas of new-born children, that "of the probable cause of the malady we may say this much, that we observe it principally when an ill-wind of puerperal fever blows over the lying-in hospitals of Paris, the children seem to have inherited from their mother a purulent diathesis, and they appear still to be within certain limits subject to the same ailments as the mother, whose constitution has so lately been theirs." ** These phenomena plainly indicate the common origin of the maladies in

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* *Lancet*, March 7, 1835.
† Edinburgh *Med. and Surg. Jour.* April, 1838, p. 421.
‡ Am. *Jour. of Med. Sci.*, Oct. 1842, p. 416,
§ Am. *Jour. of Med. Sci.* July, 1843, p. 260, from the New England *Quarterly Jour. of Med. and Surg.*
‖ Tweedie's *Med. Library*, Art.—Puerperal Fever.
¶ Am. *Jour. of Med. Sci.*, Jan.. 1846, p. 58.
** N. Y. *Jour. of Med.* vol. viii., p. 393.

question. But in respect to puerperal fever, there is another zymotic source of the disease, of which the following is a brief notice.

8. *The emanations from bodies examined after death produce puerperal fever.*—This fact is deserving of being prominently exhibited among the phenomena relating to the etiology of puerperal fever. A few examples will present it in a proper light. We are informed by Dr. Lee that "in the autumn of 1829, a physician was present at the examination of the body of a woman who died soon after delivery, from inflammation of the peritoneal and muscular tissues of the uterus (puerperal fever). He dissected out the uterine organs, and, after inspecting them carefully, assisted in sewing up the body. He had scarcely reached home when he was hastily summoned to attend a young lady in her first labor; she was safely delivered. In sixteen hours she was attacked with violent pain in the region of the uterus; unequivocal symptoms of uterine phlebitis soon after showed themselves, and she narrowly escaped with her life."* A striking example of this kind is related by Dr. Gooch.† Dr. C., of New York, informs the writer that he made, for a medical friend, a post-mortem examination of a woman who had died of puerperal fever, and that within a few days afterward, he delivered several women who were seized with puerperal fever, which proved speedily fatal. Dr. C.'s father, an extensive midwifery practitioner, who was present at the autopsy, shortly afterward encountered the same fatal form of fever in his practice. The cause of the disease, in these cases, could be traced to no other source than the body which Dr. C. had recently examined.

The fact that physicians sometimes communicate a fever poison to parturient women immediately after being engaged in necroscopic examinations, is strikingly shown in the following narrative: "Three surgeons, residing in the same town, attended the post-mortem examination of a patient who had died from gangrene, after an operation for strangulated hernia, and were all of them employed in handling the diseased parts. One of them was called from the inspection to a case of labor which terminated in fatal puerperal fever; he had other cases in rapid succession. The other two surgeons had also fatal cases of puerperal fever within a day or two after the same inspection. On casually meeting, they mentioned their misfortunes to each other, and were thus convinced of the origin of

* *On Puerperal Fever and Crural Phlebitis.*

† *An Account of some of the Most Important Diseases peculiar to Women.*

the disease. They all abandoned practice for a short period, and had no more of it."*

Among other interesting particulars published by Dr. Holmes in relation to a series of seven cases attended by a Dr. C., between the 20th of March and the 8th of May, it is said that, "on the 19th of March, Dr. C. made the autopsy of a man who died suddenly, sick only forty-eight hours; had œdema of the thigh, and gangrene extending from a little above the ankle into the cavity of the abdomen. Dr. C. wounded himself very slightly in the right hand during the autopsy. The hand was quite painful the night following, during his attendance on the patient No. 1. He did not see this patient after the 20th, being confined to the house, and very sick from the wound just mentioned, from this time until the 3rd of April."† The first of Dr. C.'s cases seems to have arisen from a poison carried by him to his patient from the body he examined; and the others, if not referable to the same source, were probably connected with his own disease, occasioned by the dissection wound.

But nowhere have more impressive facts occurred, demonstrating that the "cadaveric poison," emanating from the bodies of patients dying of different forms of disease, is capable of producing puerperal fever, than in the great lying-in hospital of Vienna. "Since there has been," says Dr. Semmelweiss, in that institution "a division for the instruction of physicians, and another for midwives, the number of deaths on the physicians' side was constantly greater—in 1846, it was four times greater than on that of the midwives; and in an equal number of puerperal cases in that year, the *excess* of deaths on the physicians' side was 400." This excess of deaths Dr. Semmelweiss imputes to a poison conveyed by himself and students from dead bodies after autopsies, and that, too, though attention was given to the washing of their hands before examining their parturient patients. "This was the only one of the probable causes of puerperal fever which either did not occur at all, or occurred only in a very limited degree, in the midwives' division. He now adopted the rule, that every one, before examining a patient, should wash his hands with chlorine water; and from the time when this rule was adopted, the patients on the physicians' side were not more frequently attacked with puerperal disease than those on the midwives'. In 1848, of 3780 patients delivered on the physicians' side, forty-five died, or

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* New York *Journal of Medicine, etc.*, July, 1844, from the *Fifth Annual Report of the Registrar General of Births*, etc.

† Am. *Jour. of Med. Sci.*, July, 1843, p. 260, from the New England *Quar. Jour. of Med. and Surg.*

1.19 per cent.; and on the midwives' side, of 3219 cases, thirty-three died, or 1.33 per cent."*

It is not necessary that an accoucheur should handle a dead body, or take an active part in its dissection, in order to convey from it a poisonous principle to the apartment of a parturient woman. His presence, as a mere observer, at a post-mortem examination, is sufficient for that purpose. Dr. Merriman tells us, as quoted by Holmes and Kneeland, that "he was at an examination of a case of puerperal fever at two o'clock in the afternoon. *He took care not to touch the body.* At nine o'clock the same evening he attended a woman in labor; she was so nearly delivered that he had scarce anything to do. She died in forty-eight hours; and the child also died of *erysipelas* two days afterward."†

In further studying the subject of puerperal fever, we find other phenomena which show the connection between puerperal fever and erysipelas. We refer especially to those which relate to their prevalence and pathology.

9. *Puerperal fever and erysipelas are generally concomitant epidemics.*—This general fact is substantiated by the concurrent testimony of numerous observers in Europe and America. "I will not venture positively to assert," says Dr. Gordon, "that the puerperal fever and erysipelas are precisely of the same specific nature; but that they are connected, that there is an analogy between them, and that they are concomitant epidemics, I have unquestionable proof. For these two epidemics began in Aberdeen at the same time, and afterward kept pace together; they both arrived at their *acme* together, and they both ceased at the same time."‡ In describing the epidemic puerperal fever at Leeds, Mr. Hey remarks, that "no disease was so prevalent as to deserve the name of an epidemic, except erysipelatous inflammations, which prevailed during the whole period of the puerperal fever, and in many cases were of a very malignant kind; insomuch that I do not recollect ever to have seen worse cases of erysipelas than at that time."§ Dr. Storrs, from whose paper on puerperal fever we have before had occasion to cite many interesting facts, states that "during the whole of the winter of 1840–1, erysipelas, typhus fever, and scarlet fever, of a malignant form, prevailed in Dorchester to an unusual extent, especially erysipelas, which I have never

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* British and Foreign *Medico Chirurgical Review*, as quoted by Liebig, April, 1854, p. 257.

† Am. *Jour. of Med. Sci.*, January, 1846, p. 57.

‡ *Treatise on the Puerperal Fever at Aberdeen.*

§ *Treatise on the Puerperal Fever.*

before known to be so general or so severe. Puerperal fever was never known to have prevailed epidemically up to this time, or if it did so, it was never acknowledged."*

Similar evidence of the contemporaneous prevalence of the diseases in question, has been furnished by American physicians. Dr. Condie, in a discussion at the College of Physicians of Philadelphia, in relation to the puerperal fever which prevailed in that city in 1842, said, "that in the neighborhoods, and even houses in which cases of puerperal fever have occurred, erysipelas has prevailed to a greater or less extent. Erysipelas has, indeed, been far more prevalent throughout the whole of the districts south of the city, during the past winter and spring, than Dr. C. had known it to be during the last twenty-six years."† Corresponding with these statements are the facts, before referred to, which fell under the observation of Dr. Jackson, while practicing in a rural district of Pennsylvania, and, also, of Dr. Wilson, at the Philadelphia Hospital (Blockley), in 1842.‡ Drs. Hall and Dexter tell us in their account of the erysipelatous fever, as it appeared in the northern section of Vermont and New Hampshire, in the years 1842–3, that "the effects of this epidemic have been experienced in every situation and condition of life, in the populous town and lonely settlement, in the homes of the rich and the log-cabin of the poorest squatter. It has ranged through all variety of location, of hill and valley, and has spread consternation and terror wherever it has appeared. In the County of Caledonia, Vt., thirty cases of puerperal peritonitis occurred, *only one of which recovered.* And in Bath, N. H., containing a population of fifteen or sixteen hundred, twenty mothers died from puerperal peritonitis, and about forty with erysipelas."§ Dr. Dutcher, of Lawrence Co., Pennsylvania, in his brief paper on the connection between puerperal peritonitis and erysipelas, states, "that sometimes the two diseases prevail as concomitant epidemics, beginning at the same time, or nearly so, keeping pace with each other, and terminating simultaneously."‖

The above authorities abundantly establish a relationship between erysipelas and puerperal fever, arising from their dependence as epidemics upon the same meteoratious influence.

Though it does not fall within the design of this essay to inquire into the special pathology of puerperal fever, erysipelas, and typhus, yet as there are questions relating to their

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* Am. *Jour. of Med. Sci.*, January, 1843, from the *Prov. Med. Jour.*
† Ibid, October, 1842, p. 412.
‡ Ibid, October, 1842, p. 412.
§ Ibid, January, 1844, p. 21.
‖ Ibid, January, 1856.

nature, which have a bearing on their etiology, we can not avoid adverting to them. Among the questions alluded to, the one of the highest interest is the following :—

10. *Are puerperal fever, erysipelas, and typhus one and the same disease ?*—To this question there can be but one answer, if, in respect to the occasional causes of these diseases, it be allowable to decide it by the philosophical axiom that like causes produce like effects ; for, judging from the facts before us, it is plain that, in very many instances, especially in hospitals, and, in certain circumstances and seasons, in private dwellings, the same exciting or efficient cause produces the three diseases ; and, consequently, that there can be no error in concluding that they are, however diverse in form, of the same nature. That this is the conclusion at which many observers have arrived, is sufficiently evident from what has already been said. But to show that such is the fact, it may be well to notice the terms in which that opinion has been explicitly expressed or implied. Mr. Ceely, in his account of the disease in Aylesbury, says, that " the puerperal fever, then, was esteemed a mode of the prevailing contagious epidemic ; it was erysipelas of the mucous membrane of the vagina and uterus, extending into the abdomen through the fallopian tubes, and from them, by contiguity and continuity of surface, to the parts above described." * It is observed by Dr. Marsh that " the true character of the epidemic puerperal fever seems to be typhus fever, accompanied by local inflammation of the diffusive or erysipelatous kind." † Mr. Nunneley, to whose work we have before referred, considers puerperal fever as one of the forms of erysipelas. Mr. Storrs, in a paper on puerperal fever, published subsequently to the one from which we have drawn many valuable facts, gives evidence to prove " the origin of puerperal fever from an animal poison," and also, " the power of puerperal fever to produce, indiscriminately, in the persons of the attendants and nurses, and in the families of the affected parties, erysipelas, typhus, and a fever, sometimes, in the male, strongly resembling the puerperal." ‡ These various affections seem to be essentially the same in their character, and are clearly reducible to the group of idio-miasmatic disorders, of which simple typhus may be regarded as the generic type, or most common form. It is in puerperal fever, erysipelas, and their allied forms of disease, that Dr.

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* *Lancet*, March 7, 1835, p. 813.

† Dublin *Hospital Reports*, vol. iv., p. 521.

‡ N. Y. *Jour. of Med.*, etc., July, 1844, p. 74—from the *Fifth Ann. Rep. of the Regist. Gen.*, etc.

Harden, of Georgia, finds some of the strongest evidence of the truth of his ingenious views of "*isopathia, or the parallelism of diseases,*"* *i.e.*, "the disposition of diseases to anastomose with each other." † With clear views of the etiological identity of the disorders in question, a late English writer summarily remarks: "typhus fever, some forms of puerperal fever, erysipelas, etc., attended with the severest constitutional irritation, may be generated in the wards of hospitals, under the influence of overcrowding and consequent vitiation of the air, —the *encombrement* of the French, the *ochlesis* of Dr. Gregory." And he adds: "there can be little doubt that, in these cases, a subtle poisonous matter enters and ferments in the blood." ‡

It is worthy of notice, as additional evidence of the unity of puerperal fever and erysipelas, that the phenomena of both disorders occur coincidently in the same patients. Dr. Johnstone, in adverting to such a combination of phenomena, relates a case of puerperal fever in which erysipelas appeared on the arms the day before the patient died. § Dr. Wells mentions, on the authority of Dr. Pitcairn, the case of a lady who had been attacked with the fever immediately after being delivered of a child, which was accompanied with an affection of the skin, somewhat like erysipelas. ‖ The patient died after a few days' illness. It is stated in Dr. Vache's valuable report of cases which occurred at the New York Almshouse, in 1840, that, in one instance, there were "erythematous patches on various parts of the body, particularly between the fingers;" and, in another, similar "patches on various parts of the body —one as large as the palm of the hand, situated just above the right wrist; another occupied the bridge of the nose." ¶ Dr. Davenport, one of the assistant physicians, during the same epidemic at the New York Almshouse, in describing the disease, says that, "in one remarkable case, the patient referred all her pain to an erythema, about as large as the palm of the hand, on the calf of her leg." ** In Dr. Holmes' paper on puerperal fever, a case is noticed in which the "patient had some patches of erysipelas on the legs and arms." †† These facts clearly indicate the erysipelatous nature of puerperal fever.

It is further to be observed, that the pathological phenom-

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* Am. *Jour. of Med. Sci.*, July, 1846.

† Dunglison's *Med. Dic.*—Isopathia.

‡ Brit. and For. *Med. Chir. Rev.*, No. viii., p. 349.

§ Referred to by Ingleby, in the Edin. *Med. and Surg. Jour.*, April, 1838, p. 417.

‖ *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge*, vol. ii., p. 219.

¶ N. Y. *Jour. of Med. and Surg.*, No. 5.

** Ibid., No. 8, p. 321.

†† Am. *Jour. of Med. Sci.*, July, 1843, p. 261.

ena of puerperal fever, and the same may be said of typhus, and hospital or epidemic erysipelas, denote the disease to be an essential, and not a symptomatic, fever. The peritonitis, metro-peritonitis, or uterine phlebitis, so generally present, and regarded by many as the more essential part of the disease, is not sufficient to account for the rapidity with which the disease, in its malignant form, generally runs to a fatal termination. In many cases the exhaustion which occurs in a few hours, far exceeds any degree of prostration which a simple and primary inflammation of the peritoneum or pelvic organs is capable of inducing in so short a space of time. Moreover, in some instances, death takes place without any remarkable inflammatory lesions. According to Professor Osiander, "the peritoneum and the uterus may be quite free from inflammation, and yet the patient may die of puerperal fever." He describes the disease under the term *puerperal typhus*, which may be complicated with phlogosis of the peritoneum, uterus, and other organs.*

Professor Simpson, one of the latest and highest authorities on the subject, says, that "occasionally, though very rarely, no inflammatory lesions whatever can be traced upon the bodies of patients who have died of puerperal fever. Dr. Locock has observed several cases of this kind, and in the practice of the late Dr. Beilby, I saw one very marked and rapidly fatal case of puerperal fever, in which my colleague, Professor Bennett, was unable to detect anywhere in the abdomen, or in the uterus, its appendages or vessels, any traces of inflammatory action or effusion."†

In the worst cases, the symptoms and brief course of the malady indicate the agency of a poison, the effect of which on the system is irresistible and deadly.

That the distemper, in its malignant form, is, in fact, not a pure phlegmasial disease, is also obvious from the utter insufficiency of bloodletting to arrest its fatal tendency. The malignant cases reported by Dr. Vache and other practitioners in this country, and by many European physicians, attest that, when fully developed, their progress to a fatal issue admits of no check by the loss of blood. M. Moreau says, in a communication made to the Academy of Medicine at Paris, "I am persuaded that repeated bleedings only hasten forward the fatal event in epidemic puerperal fever. In this respect, no comparison can be instituted between these cases and accidental peritonitis. We have here a general disease, *morbus totius*

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* Am. *Jour. of Med. Sci.*, vol. xxiv., p. 447.

† *Obstetric Memoirs and Contributions.*, vol. ii., p. 23.

substantiæ, and simple antiphlogistics have not the same power." Capuron and Bouillaud entertain similar views in respect to the use of the lancet in the epidemic form of the disease.* If venesection is ever useful, it is so only when employed, as advised by Gordon, in the earliest period of the disorder. It may then, no doubt, sometimes act favorably, by preventing or subduing the inflammatory complications which exasperate the malady, and which, of course, if not controlled, accelerate its fatal termination.

But here the question arises, if typhus, erysipelas, and puerperal fever spring from a common miasmatic source, why, when one of them is prevalent, are not the others also? That they frequently do prevail together we have already shown by ample evidence. It is well known, however, that, of the maladies in question, the one most liable to be generated in lying-in hospitals is puerperal fever; and, also, that this disease often prevails in such institutions, without either typhus or erysipelas appearing among the nurses and other attendants. Occurrences of this kind invest the subject of puerperal pestilence with the highest interest, as will be seen in the discussion of the topic to which our attention is next invited.

11. *Extreme susceptibility of puerperal women to the effects of idio-miasma.*—The extraordinary liability of puerperal women to be affected by *idio-miasma*, and putrid emanations from the human body, is manifestly owing, first, to the physiological changes which the female economy undergoes during utero-gestation and parturition; and, secondly, to the influence of a peculiar insalutary constitution of the air, or *epidemic meteoration*, which recurs and prevails periodically. So highly susceptible are puerperal women rendered by these causes, and especially by the latter, to the impressions of idio-miasma, that no sooner is the poison engendered in lying-in hospitals, than it acts upon them with unexampled celerity and force. In many instances, the quantity of the miasm, diffused in the air of an apartment, is not sufficient to produce disease in the nurses and attendants. It is only when the poison is more concentrated, and there exists an epidemic influence which powerfully predisposes to adynamic diseases, that typhus and erysipelas occur, to any extent, cotemporaneously with puerperal fever and typhus, in lying-in hospitals and private practice.

It is remarkable, too, in how dilute a state *idio-miasma* is capable of acting with severity on women in childbed. Hospitals, in which puerperal fever has recently prevailed, often

* N. Y. *Med. Gaz.*, vol. i., p. 224.

retain a sufficiency of the poison to produce the disease, for weeks after they are vacated and rendered apparently pure by the disinfecting agencies of washing, fumigation, and ventilation. This circumstance illustrates the exalted susceptibility of puerperal patients to the noxious operation of idio-miasma; as does, also, the great mortality of the disease. Typhus fever and erysipelas, occurring in nurses and others from the same poison which produces puerperal fever, are comparatively safe diseases; while puerperal fever is fatal to the great majority, and, in some epidemics, to nearly the whole number of those attacked by it.

Nor is it less remarkable that women removed from infected wards before their delivery, with every precaution in regard to cleanliness of person, clothing, and bedding, to pure and airy apartments, sometimes suffer by the disease not less severely, after their parturition, than if no such removal had taken place. We are told by Dr. Vache, in his account of the fatal epidemic at the New York Almshouse, in the winter and spring of 1840, that the "only rational means of arresting this terrible scourge was the total abandonment of the lying-in establishment at Bellevue." The entire removal of the patients to the lunatic asylum at Blackwell's Island, and the adoption of every appropriate measure of hygiene, promised for a season an exemption from the disease; but, subsequently, "it here appeared with equal, if not redoubled fury, attacking almost every woman confined, and setting at defiance every effort for their recovery."* Events somewhat similar happened in 1833, at the Philadelphia lying-in hospital, under the observation of Dr. Hodge.† In explaining these phenomena, it is, perhaps, natural to suppose that the recurrence of the disease, in the place to which the patients are removed, is owing to some neglect or carelessness in executing a system of cleanliness and ventilation, in consequence of which idio-miasma is engendered *de novo* from the excrementitions and incidental discharges of the lying-in patients. In this mode it is probable that the disease is sometimes reproduced; but in those cases of removal, in which no hygienic precaution is neglected, it is reasonable to conclude, that the patients receive the puerperal fever poison into their systems, previous to leaving the infected wards, and that it remains latent until after parturition, when the disease is rapidly developed. The disease recurring in this manner, an idio-miasmatic atmosphere is unavoidably reproduced from the exhalations and other discharges of the patients first

* N. Y. *Jour. of Med. and Surg.*, No. 5, p. 98.
† Am. *Jour. of Med. Sci.*, vol. xii., 1833, p. 329.

attacked, and, consequently, each succeeding case adding to the existing infection, the apartments may at length become as pestiferous as those from which the patients had been removed.

If this view of the subject be just, it follows, that in removing women from an asylum in which puerperal fever is raging, they should not be reassembled in another building, however pure and well ventilated; they should be dispersed or separated, so that no two of them shall occupy the same apartment. Seeing the danger of fever originating in lying-in asylums, M. Piorry thinks that "lying-in women should be admitted into the general hospitals, and not congregated together in special ones."*

From what has been said, it is obvious that the high rate of mortality of puerperal fever depends more upon the influence of the predisposing causes, inducing in puerperal women an exquisite sensitiveness to the impressions of *idio-miasma*, than upon any peculiar or extraordinary virulence of that poison. In fact, it appears that in relation to other individuals than puerperal women, *idio-miasma*, regarded as the cause of typhus and erysipelas, is comparatively destitute of a pestiferous quality; but that in relation to lying-in women, under an epidemic influence, it is a deadly poison. The statistics of typhus and erysipelas show that a large majority of those attacked by these diseases recover; whereas the statistics of puerperal fever exhibit a ratio of mortality far exceeding that of every other form of pestilence. Such, indeed, has everywhere been its fatality, that a "professor in the University of Edinburgh," says Gordon, "declared the puerperal fever to be incurable."

12. *Conclusion.*—In reviewing the facts which have been stated, it appears that puerperal fever sometimes arises from the noxious air generated from the foul discharges of puerperal women in crowded and ill-ventilated lying-in hospitals; sometimes from the absorption of putrescent matters lodged in the uterus and vagina after parturition; sometimes from the exhalations of patients laboring under typhus fever, erysipelas and gangrenous diseases; and sometimes from the emanations from the human body dissected after death.

It further appears, that the miasms of typhus, erysipelas, and puerperal fever are severally capable of producing any one, or all of these diseases; and that they may attach themselves to the persons, or clothing of midwives and physicians, and thus be transported from their sources to the chambers of lying-in women. It is, also, observable, that the more ordinary form of disease, induced by the febrific effluvia in question,

* *Med.-Chirurg. Rev.*, No. 105, p. 278.

is typhus and its modification typhoid fever whilst puerperal fever and hospital erysipelas are but varieties of that disease, taking their forms from the peculiar predisposing conditions of the system, and certain epidemic influences.

Finally, in contemplating the results of our inquiries, there are two things which can not fail to be specially suggested and to make durable impressions on the mind. The first is, the importance of preserving in absolute purity the persons, clothing, and bedding of the inmates, and also the floors, furniture, and atmosphere of lying-in hospitals; and in case puerperal fever manifests itself, of adopting the most prompt and efficient means of extinguishing it—such as ablution, ventilation, fumigation, and, if necessary, dispersion of the patients. The second is, the imperative duty of physicians ever to bear in mind the danger of their becoming agents of disseminating the disease in epidemic puerperal fever seasons, and to observe every precaution against such accidents. If, indeed, there be any moral obligation resting on a medical man to his patients, paramount to every other, it is that of refraining from attending a female in labor, if there be the slightest chance of his conveying to her the germ of a mortal disease.

ART. II.—*On the Prevention of Abscesses of the Breast by Frictions with the Hand; and on their Treatment, when open, by means of Compressed Sponge.* By S. CONANT FOSTER, M.D., late Physician to Bellevue Hospital, etc., etc.

I HAVE been often asked to commit to paper my views in regard to the treatment of mammary abscess, and now that the method which I have found most beneficial has been tried by others, and has stood the test of their observation, I feel that it has become a duty to publish the results to the profession.

Under the head of "Hospital Reports," will be found a number of cases treated at Bellevue Hospital, under the supervision of Dr. Stephen-Smith, by Dr. J. G. Johnson, one of the House Surgeons of that institution. The MSS. of these cases has been very kindly submitted to my perusal by Dr. J., to whom I feel much indebted for this courtesy, and for the care which he has bestowed upon them. These cases, in connection with those which I shall offer, afford conclusive evidence, it seems to me, of the superiority of the treatment pursued over the old methods. What these old methods were may be learned from Dr. Johnson's paper, where the authorities will be found collated, and the opinions and advice of the principal surgeons of the present day, quoted in their own words.

Before entering upon the subject of the best mode of treatment of any disease, it is proper to consider if the disease may not be avoided altogether. Now, I do not hesitate to assert, with regard to abscesses of the breast, dependent upon lactation, that this may be done in almost every case. I base this assertion upon the following grounds:—1. During six months that I passed in attendance upon the Dublin Lying-in Hospital, under the mastership of Dr. Evory Kennedy, now nearly twenty years since, there were about twelve hundred births. Only two abscesses of the breast occurred among these patients during their stay in the hospital. One of these was the result of an injury, and came on before confinement; the other was in a patient of marked cachectic condition. 2. For the first twelve years of my practice, I had not a single case occurring to a patient of my own during the first month after delivery; and I have never had one since which was not due to mismanagement on the part of the patient, or want of skill in the nurse, or to an already depraved condition of the blood. 3. For nearly six years that I was visiting physician to Bellevue Hospital, excepting in the first two months, no case occurred among the lying-in patients under my charge, which I attribute to my insisting strenuously upon the adoption of the means I had seen to be so efficacious elsewhere.

Laying it down as a rule, therefore, that *all milk abscesses should be prevented*, the exceptions are—1. Cases where there exists a marked cachexia, due to syphilis, scrofula, and the like. 2. Where there has been any external injury. 3. When the nipple is in such a state as absolutely to obstruct the passage of the milk. 4. Where, as in hospitals occasionally, there exists an endemic tendency to purulent deposits.

Let us now glance at the means by which this prevention is to be accomplished. They will be found to be very simple. So simple, indeed, that I should hesitate to dwell upon them, if I were not convinced that, when they fail, it is for want of a skillful application of them. If, therefore, I should seem to be discoursing of trivialities, I shall shelter myself behind the example of the great Abernethy, who boasted, in his discourse before the College of Surgeons, that he had taught that august body how to make a poultice. I desire, too, to urge upon physicians to devote more personal attention to these apparently little matters; for the most faithful and well-intentioned nurses will often fail, for want of knowledge of the structure and physiology of the part which they have to deal with.

The prophylactic treatment of milk abscess should commence, strictly speaking, at the age of puberty. This is a matter upon

which mothers should be well informed, as more will depend upon them than upon the physician. At the period when the development of the breasts is taking place, much mischief is very often done by the use of improper clothing. A close-fitting waist, keeping the nipple compressed at this period, and preventing it from taking its natural form, though it may occasion no inconvenience at the time, will be a fruitful cause of suffering when the girl has become a mother. For, in these cases, it will probably be discovered after confinement, that the nipple, instead of being prominent, is depressed, so that the child can not seize hold of it. It has then to be drawn out by breast-pumps and other appliances, often at the cost of great pain. It becomes inflamed and excoriated ; and, perhaps, the inflammation may be propagated along the course of the lactiferous tubes, and result in an abscess at the base of the breast.

This is a cause of breast abscess which we seldom have it in our power to prevent. But where a depressed condition of the nipple exists from this early error, much may yet be done if it is permitted to treat it during pregnancy. In this condition, a second development of the organ takes place. There is an increased vascular and nervous activity, by taking advantage of which we may often remedy the old trouble in some degree, and provide a good nipple for the period of lactation. To effect this end, the first precaution is to avoid all undue pressure from clothing, during the earlier months especially. The nipple should then be drawn out daily, with moderate force, by a breast-pump or by the mouth, which accustoms the part to the traction it will receive from the child. This process can be suspended for a few days at a time, if the nipple should become sore. Astringent applications, as is well known, tend to harden the skin of the nipple. Of these I know of none better than the popular one of borax and brandy, which should be applied daily during the last months of gestation.

There is a certain danger attendant upon these manipulations with the nipple during pregnancy, which must not be lost sight of. It is possible, in this way, to stimulate the uterus into premature action, and so to provoke a miscarriage. But this can only occur in exceptional cases, and will probably give sufficient warning of its approach. Lest it should occur, it is well not to persist in drawing out the nipple longer than ten or fifteen minutes at a time, and to abandon the practice altogether should pelvic pains, or other symptoms of approaching labor, manifest themselves. I have never seen a miscarriage so produced ; but in one case which I attended, the process had to be given up on account of the severe, contractile, uterine pains which followed each application of the pump.

With the management of the nipple after childbirth, every one is familiar. Probably, under any treatment, we must have sore nipples occasionally. As I have nothing new to offer concerning the treatment of these, I will simply say that I rely more upon the protection of the part from friction by the clothes, upon allowing the air to circulate around it, and upon the application of castor-oil after every time the child sucks, than upon most of the other means in common use. The neck of a common junk bottle, cut off, made smooth, and worn constantly over the nipple, accomplishes the two first of these objects very satisfactorily in most cases.

So much for the prophylaxis of breast abscess as far as the nipple is concerned. As to the general care of the breast after childbirth, the obstetrical text-books give a variety of directions. No doubt the first and most important indication is to prevent the accumulation of milk in the breasts. He who succeeds in doing this has overcome the chief source of danger of abscess. With this in view, I examine the breasts carefully on the second day after delivery, and direct the nurse, in case there should be the slightest hardness, to rub them well with warm oil *until they are soft*, and to repeat the operation as often as the hardness returns. This is a very common and a very simple direction, and yet it is very rarely carried out efficiently. When it is done well, it is worth more than all other means put together to keep the breast in good order. I do not despise cathartics, and nauseants, and sudorifics when inflammation has commenced, though even then I do not rely *chiefly* upon them to prevent the formation of matter ; but I must express my disapprobation of poultices with a view to resolve the hardness ; and if it were necessary, I would dispense with all other means, excepting the nursing of the child, and rely upon the rubbing alone, always provided it could be done frequently and efficiently.

A great element of success is to commence early—*obsta principiis*. The rubber should stand behind the patient, and having lubricated the whole organ freely with oil, should use both hands, one for the friction and the other for counter-pressure, rubbing in the direction of the milk ducts, *i. e.*, from the periphery of the breast toward the nipple. If this is done with *firm pressure*, a few minutes will generally suffice to reduce the organ to a soft condition ; and in case the milk has come, it will flow freely from the nipple. If the child is vigorous and takes the nipple well, there will usually be no need of pursuing this plan after two or three days. But it is desirable to keep an eye upon the organs, and in case any induration remains after nursing, to rub it away at once.

I have intimated that it is difficult to get this well done. This is sometimes the fault of the patient, and sometimes of the nurse. The patient's breasts are very tender to the touch, and she thinks she can not bear the rubbing. But if it is done rightly, the pain will be of very short duration, and at the end of a few moments she will be able to bear any amount of pressure without suffering in the least. There seems to be a certain amount of tact requisite for this little manipulation, which many nurses never acquire. In such a case, I think it is the duty of the medical attendant to lay aside all considerations of dignity, and do it himself. But as the physician can not be constantly in attendance, it is necessary, if after one or two trials the induration is not permanently discussed, to resort to other means. And here we have a most invaluable resource in the compressed sponge.

For the suggestion of this mode of treating such engorgements, I am indebted to Dr. J. P. Batchelder, of this city, who has applied this article to so many excellent uses. Its use in the treatment of open breast abscesses I believe I was the first to test, and it is a chief object of this paper to record the results of the method. The mode of preparing the sponges is very simple. A selection should be made of specimens which combine softness with elasticity, and of a size to suit the indurated portion. After freeing them from sand they should be dried, and then subjected to a heavy pressure for twenty-four hours. A common letter-copying press answers the purpose exceedingly well. They are then to be placed upon the breast and confined by a roller bandage, after which they are to be thoroughly saturated with lukewarm water. The nipple should, if possible, be left exposed, so that the child may nurse as usual. I will relate briefly the first case in which I adopted this plan. It has proved equally satisfactory in every instance in which I have employed it since.

A lady whom I had attended in three confinements was, after the third, threatened with abscess in the breast. I directed, as usual, the frictions with warm oil, and administered, subsequently, cathartics, and nauseating doses of tartar emetic. The inflammation was thus kept in check, but the induration continued. This patient had a most faithful nurse, who rubbed the breast very perseveringly for several days, but without much effect. Satisfied that the want of success was due to the manner of the rubbing, I resolved to rub it myself, and in twenty minutes or less, the breast was completely soft. Next day, however, it was nearly as hard as ever. I now determined to apply the compressed sponge. Two days wearing of this entirely removed the hardness, which did not again recur.

I have pursued the same plan with the like success in engorgements occurring at a later period in lactation, where the frictions with oil had failed to subdue the hardness.

Before proceeding to show the effect of the application of compressed sponges to abscesses which have already formed and been laid open, I desire to call attention to the treatment directed by the most eminent of modern writers on the subject. For this purpose, I beg to refer to the remarks accompanying Dr. Johnson's collection of cases. I also, appeal to the experience of every surgeon to bear me out in the assertion that, in the deep-seated abscesses of the breast of nursing women, it is reasonable to anticipate a long and tedious suppuration, with the chance of sinuses and fistulous openings, enduring for many months. Not only is this true, but the plans formerly adopted of stimulating injections, setons, extensive incisions, objectionable as they were, were often unsuccessful, or only cured by destroying the organ in great part, or, at least, rendering it completely unfit for performing its proper function.

The only way of avoiding these evils that has been attended with any degree of success, is to apply pressure in some form or other, generally by means of strips of adhesive plaster. Recently, M. Chassaignac has published a memoir upon this subject, (*Gazette Medicale*, 1855—Nos. 3, 4, and 39) which details the method and results of a new system of treatment, presenting considerable advantages over all that preceded it.

His plan is as follows :—As soon as the existence of matter is ascertained, he makes one or more small punctures, and having pressed out the matter as much as possible, injects the abscess with lukewarm water, using generally the hydrocele syringe or the irrigator, and continuing the douche until the cavity seems entirely emptied of pus, and the liquid which flows out is perfectly limpid. The cupping glass is then applied over the wound, and, if necessary, the same process is repeated until every drop of pus is evacuated. The wound is then closed by adhesive plaster and the *cuirasse* applied. This consists, if I am not mistaken, of numerous narrow strips of plaster, so adjusted as to envelop and compress the entire breast. The arm is then bound down to the side, and the dressing is allowed to remain twenty-four or forty-eight hours, unless pain or tumefaction indicate the re-filling of the abscess. At the end of this time the dressing is removed, and it is found that union by the first intention has taken place, in the proportion of about one fifth of all the cases. Sometimes there is a little secretion of plastic lymph, and then the *cuirasse* is re-applied once or twice. A cure is thus accomplished in from one to eight days.

In case the abscess refills, the treatment for union by the second intention consists in the daily, or more frequent, use of the injections and cupping, with the addition of the introduction of canulæ into the wounds, made of soft india-rubber, and split at one end, so as to have the shape of the letter Y. These are kept in place by a narrow strip of adhesive plaster passed between the forked ends, and shortened from time to time, as occasion may require. The breast is kept covered with a poultice, and the poultice with oiled silk. In very grave cases, where the abscess is at the very base of the gland, the seton is resorted to.

By these means M. Chassaignac considers, and shows, that the duration of these abscesses is much abbreviated. He says that, since he has adopted them, he never sees the cases last for whole months as was formerly frequent. "A duration of three months, for example, is no longer known in our wards." Of the cases reported, where union took place by the second intention, one was cured in a week, and most of the rest within a month, but it is not pretended that all get well as soon as longest of these periods.

I have been thus particular in furnishing an abstract of M. Chassaignac's method, because I believe it to be little known in this country, while it is eminently worthy of attention. At the same time, I desire to invite a comparison of the results of his treatment and that by the sponges, of which I am now about to relate some cases.

One word as to classification. M. Chassaignac makes two grand divisions, viz.: 1. Extero-mammary. 2. Intro-mammary. The first of these divides itself into sub-cutaneous and sub-adenoid. The second into interlobular and canalicular. Each of these four is again divided into several varieties, as diffuse, phlegmonous, angioleucitic, etc. While I admire the exceeding nicety in diagnosis of this distinguished surgeon, and have no doubt of the correctness of his classification, yet I submit that, practically, it is not of very material consequence to make such minute distinctions. What we do wish to know, however, in every case is, whether or not the gland itself and the lactiferous tubes are involved. For, in the one case, we *may* allow the child to draw the milk from the breast, while in the other it *must* be strictly forbidden. We know that the tubes are affected, when we see milk mingling with the pus which is discharged from the abscess, or when pus is discharged from the orifices of the nipple. But we can not always be sure that they are not involved when neither of these things takes place, since the secretion of milk may be entirely arrested, and so not appear at the cut, or pus may be formed at the extremities

of the canaliculi, and discharge into the cavity of the abscess, only finding its way through the nipple as the case approximates to a cure. This happened in a very marked manner in one of the cases whichI shall relate.

I am unable to furnish exact notes and dates of the three or four cases of *superficial* abscess which I have treated by the sponges. They have, however, all healed up in a manner equally rapid with those reported by Mr. Chassaignac, viz.: in twenty-four to forty-eight hours. In one instance the abscess was on the inner edge of the gland, and of the size of a hen's egg. In another there were two, and on each side, pointing within the areola, occurring on successive days. Only one application of the sponge to each was required, the infant continuing to nurse without interruption. The cases which follow involved a large portion of the organ and the milk tubes.

Case 1.—Mrs. H. J. was confined with her first child August 1, 1855. I left town a few days after, and on my return, about the first week in September, found her with a very large abscess, involving nearly the whole breast. The patient, naturally robust, was in a state of extreme prostration. The breast was opened, in the course of the next few days, in five different places, and discharged an enormous quantity of pus. A probe could be passed its whole length, in different directions, through and under the gland. The entire organ was in a state of induration and enlargement. No milk could be got from the nipple. On September 13, a new point of inflammation having appeared on the upper part, and the skin being already bright red over a space of two inches square, I applied two sponges—one to the newly inflamed part, and the other to the lower part of the breast, covering all the incisions.

September 14.—Inflammation and hardness entirely gone in the first named locality; the size of the breast diminished one-third; the cuts healing, and the milk running freely.

Being unable to obtain a supply of the compressed sponges, I did not repeat them on the 14th; but they were re-applied on the 15th, 17th, and 18th. On this last day, the wounds had all healed, excepting one near the nipple, from which, as well as from the nipple, the milk flowed freely. Breast about one-half the size of the other. Some induration in the lower third only.

September 19.—Further improvement. Sponges omitted—the breast being merely suspended in a sling; patient rode and walked out.

September 20.—Some soreness and induration in upper part of breast. One of the cicatrized points below looking red, I opened it with the end of a probe, and let out two or three

drops of pus. From another, which was opened in the same way, a few drops of clear serum flowed. Re-applied sponges.

September 21.—The fistulous opening near the nipple gave exit, after pressure upon the upper part of the breast, to about a drachm and a half of sero-sanguineous matter. The other openings firmly healed again, and the breast was everywhere softer, and free from tenderness.

From this date to the 26th the sponges were applied daily, with one exception. On the 27th, the patient left town on a visit to some friends, the general health entirely restored—the whole breast being soft; the milk flowing very freely; the fistulous opening almost healed, barely receiving the point of the probe, and yielding a single drop of serum. From the outset to the close of this case, there was no pain following the application of the sponges—the patient, on the contrary, obtaining marked relief under their use. A very slight inconvenience was felt, the first day or two, from the tightness of the bandage. The patient was allowed full diet, with wine.

A year afterward, I attended this lady in a second confinement. There was some threatening of inflammation a second time, but it disappeared after one or two rubbings, and she nursed her child on this side as well as the other.

Case 2.—Mrs. W. was confined near the last of May, 1856, with her second child. This lady had been attended in her labor by a homœopathist, and was doing well until about the tenth day, (notwithstanding a very constipated state of the bowels, which, as usual, had not been interfered with,) when the breast began to inflame. It was treated lightly by the attendant, who left town, and I was called in on the evening of June 6. Although there was some evidence of suppuration, I yet hoped to avoid an incision, and on the 7th I applied the compressed sponges, and continued them until the 10th, with entire relief of the pain, and subsidence of inflammation, when, finding that it was indispensable to evacuate the matter, I ordered a poultice, and opened the abscess on the 11th, giving exit to about half a pint of pus, mixed with milk. On the 12th I applied the sponges again, and continued them daily until the 17th. On the 14th the discharge consisted almost entirely of milky serum.

June 16.—Dressing omitted at night.

June 17.—A soft moist sponge substituted for the compressed.

June 18.—Bandages omitted. Two or three drops of serum only from the cut.

June 20.—Wound perfectly cicatrized; breast free from hardness everywhere, and milk flowing freely.

In this case the sponges were only required for five days after the abscess was opened.

Case 3.—Mrs. M., æt. about 20 years, of healthy constitution, was confined on February 25, 1857, with her first child. She had a very tedious labor, in the course of which I was called to see her, in consultation. After delivery she did well for the first week or ten days, when symptoms of breast abscess showed themselves. On March 11, I was again requested to see her, and found her with the right breast very much swollen and hard, yielding no milk ; the left also hard, to a less extent, but giving milk ; and the patient in a very feeble condition. There was, with all this, very little soreness or acute pain, but the nervous system was so far affected that she could not sleep, and the pulse was upward of one hundred. There was an obscure sense of fluctuation in the right breast, but so uncertain, that I did not feel justified in making an incision. I, therefore, applied a poultice, and, on the next day, finding no change except an increase of tumefaction, and aggravation of all the symptoms, I decided to apply the sponges. By request of the attending physician, I now took entire charge of the case. The first application was followed by a decided relief of all the symptoms. On the 13th, the matter was apparent enough, and I made an opening, letting out about eight ounces.

On this day, and the 14th, the breast was poulticed, and discharged a large quantity of pus.

March 15.—Sponges applied.

March 16 and 17.—On each of these days new collections of matter were discovered, not communicating with the first, and were opened. After evacuating the matter, which was deep-seated, the sponges were re-applied.

March 18.—After pressing out the matter as much as possible, a small slough appeared at the principal wound, which was seized by the forceps and extracted. A second slough now appeared, which was still firmly adherent. The cavity was injected with warm water (which caused no pain), and completely washed out. Poultice.

March 19.—The slough appeared loose, but so large that it was necessary to dilate the wound, after which it was extracted with a dissecting forceps. The removal was followed by the discharge of a large quantity of matter, apparently from the very base of the gland. The slough extracted was as large as a hen's egg. After its removal, the external half of the breast collapsed, forming a considerable depression. Air got into the cavity, and insinuated itself into its ramifications, being perceptible to the touch on the superior and sternal

edges, at points farthest removed from the first seat of the matter. Poultice applied this day and the next.

March 21.—The discharge having somewhat diminished, the sponges were re-applied.

March 22.—Same. Discharge very much diminished, and the breast everywhere softer.

March 23.—Further improvement. On gently rubbing the breast with oil, a few drops of milk appeared at the nipple. General condition very much improved. Gaining strength daily.

From this date until April 6, the sponges were applied daily. At each dressing the breast was rubbed with oil. The secretion of milk was re-established—a certain quantity flowing spontaneously, and two or three ounces obtained from the nipple at each dressing. Milk also flowed from the principal opening, the others having closed. Before the cavity had entirely healed, a few drops of pus found exit at the nipple. Meantime, the left breast, which had continued more or less hard on the axillary side, suppurated, and an opening was made on March 30, which discharged about four ounces of pus, and a few sloughy shreds. This breast had continued to secrete milk. It was daily rubbed and dressed with the sponges, like the other. There was little pain or soreness near the seat of the abscess. On the sternal side, however, inferiorly, and at the superior edge of the gland, there were two points where the patient complained of considerable tenderness on pressure. There was also some induration at these points, which felt to the touch like the distended vessels of the cord in varicocele. After rubbing them for some minutes in the direction of the nipple, a considerable quantity of thick milk was first discharged through the natural orifice, followed by a few drops of pus. Evidently, the matter had formed within and at the extremities of the milk tubes, and had been there imprisoned. The same phenomenon presented itself for several successive days, the quantity of pus gradually diminishing, and that of the milk, from this portion of the organ, increasing. At length, all purulent discharge ceased, and with it all induration and soreness.

Finally, on April 8, all the wounds were entirely closed; all induration had disappeared, and the patient had entirely recovered her health. There was milk, apparently of good quality, in both breasts—the right secreting a little, the left freely. An attempt was made to induce the child to nurse, but having been kept from the breast so long, it refused to lay hold of the nipple. After an interval of three months, the breasts continued to secrete a little. They were entirely healthy, the cicatrices scarcely noticeable.

Although this case was of longer duration than either of the others which I have related, I consider it as furnishing fully as valuable testimony to the merits of the treatment as any of them. Every application of the sponges was followed by marked improvement, while that and the daily frictions brought about a restoration of the suspended secretion. A very interesting point is the evidence furnished that pus may form at the extremities of the milk tubes, and be discharged through the nipple, requiring no other outlet.

I suspect that, in this case, the sloughs were formed at a very early period. The comparative absence of tenderness, combined with such extensive induration, leads me to entertain this opinion. The duration of the case was probably doubled by their occurrence.

Case 4.—Mrs. C. confined with her fourth child June 12, 1857. This patient had been in very feeble condition for a long time. Soon after the birth of the last child, about three years since, I had detected tubercles in her lungs, and during the whole of this gestation she had copious and persistent hæmoptysis. She got along pretty well, however, during her labor, and afterward for about a fortnight, when she had one or two paroxysms apparently of intermittent fever, which was relieved by quinine. A day or two after, the right breast became painful and inflamed, and a small abscess formed near the periphery of the gland, toward the sternum. This was opened, discharged about a drachm and a half of pus, and healed without difficulty. Two days later there was renewed pain and tumefaction, chiefly on the opposite side of the breast; the whole breast became hard, then œdematous, and I had no doubt of the existence of matter, though it did not point. About the same time the saphena vein of the right leg became inflamed, for a space of about four inches, near the knee. The patient was extremely averse to the lancet, and I, therefore, seeing that there was no certainty of reaching the matter without an extensive cut, contented myself with poulticing for several days, treating, meanwhile, the phlebitis, which got better. At length, detecting unequivocal fluctuation on the outer side of the breast, I made an opening with a tenotomy knife, running it in nearly an inch and a half, but nothing followed except blood and a little turbid-looking serum. The cut bled a good deal during the day, and weakened the patient considerably. Up to this time I had been unwilling to use the sponges on account of the difficulty in the lungs, fearing lest the wet condition in which the patient's chest must necessarily be might light up the old trouble, which seemed now quiescent. But having examined her chest carefully, and found much less evidence of exten-

sive disease than I had anticipated, I decided to take the risk, and on July 13, the day following the second incision, applied them so as to compress the whole breast. In twenty-four hours the œdema had almost entirely disappeared; in two days more, the milk, which had been entirely stopped, began to flow. I continued to apply the sponges daily for a week, very much to the comfort and satisfaction of the patient, who said that nothing had given her so much relief. On the 20th, I applied them for the last time, the patient going into the country next day, with the breast everywhere nearly as soft as the other, and the milk flowing very freely. I should add that, on this day, I lanced a small superficial abscess on the axillary edge of the breast, which had been observed since the second day of the application of the sponges, letting out only half a drachm of matter. There was no bad effect whatever upon the pulmonary disease. If there was any collection of matter in the substance of the breast, it had become absorbed.

In this case the sponges used were not compressed, but were applied after being wrung out of water, and subsequently saturated. They are not quite so conveniently applied as when compressed, and the pressure can not be so equably made; but they will probably answer pretty well under some circumstances.

The secret of the efficacy of the sponges consists, it seems to me, in three things:—1. They enable us to apply uniform, and at the same time gentle, pressure. 2. They have all the emollient effect of a poultice. 3. They absorb the matter or milk discharged, and promote its flow by capillary attraction.

It is proper to add that I have occasionally, in all these cases, used tents for a day or two to keep open wounds which showed a tendency to heal before it was desirable. A bit of sponge answers admirably for this purpose.

There can be no question, I think, of the superiority of the mode of treating breast abscesses, which is here described, over the old methods by the stimulating injection, the perforating seton, and the large and deep incisions. The profession must decide whether it is not also better than that of M. Chassaignac. Let us compare the advantages and disadvantages of the two methods:—

1. The method by occlusion produces obliteration of the cavity in one or two days in the superficial abscesses. Our method does the same. Here we are equal.

2. The daily injections of tepid water, and the applications of the cupping glass are attended, according to M. C.'s own statement, with very severe pain, rendering the administration of chloroform almost indispensable. Our method is attended

with no pain whatever, so far as I have seen; but, on the contrary, with an immediate sense of comfort and relief. (I attribute the pain which existed for a short time in some of Dr. Johnson's cases, to his having employed cold instead of tepid water in moistening the sponges.)

3. The method of M. C. requires the use of apparatus not always at hand; the irrigator, the hydrocele syringe, or the "*sonde a injection recurrente*," the cupping instrument, etc. We require nothing but sponges and bandages.

4. The French surgeon is obliged, occasionally, to resort to the perforating seton. With us this has not been required, nor have we thus far been obliged to make even a counter opening.

5. It has never been found necessary with us to confine the arm, though perhaps that would still further accelerate the cure.

6. The average duration of the cases of deep-seated abscesses is considerably reduced by our method.

We have little or no information, in M. Chassaignac's reports, in regard to the secretion of milk. In all the cases above related it was preserved or restored.

ART. III.—*Cases of Puerperal Convulsions.** By GEO. T. ELLIOT, JR., M.D., Physician to Bellevue Hospital.

Case 1.—Ann Winslow, a primipara, strongly built, aged 28 years, entered the lying-in asylum during my service as resident physician, in December, 1853. When I first saw her, she had drawn her mattress to the vicinity of the stove, and was reclining thereon in an exhausted condition. Her face was puffy and œdematous, with general anasarca, and she complained greatly of diarrhœa. Her urine was loaded with albumen. She was revived with stimulus, and her diarrhœa brought under control. Convulsions were anticipated.

December 30.—As her strength had now rallied, six ounces of blood were taken from the lumbar regions by cups.

December 31.—Sinapisms ordered to lumbar regions. *Vespere.* Os commencing to dilate. Slept well.

January 1, 1854, half-past eight o'clock, A.M.—Very severe convulsion, followed, in half an hour, by a second, equally severe, with no interval of consciousness; hands and arms livid; tongue bitten; four ounces of blood taken from nape of the neck and lumbar regions; consciousness then returned; os very rigid; pains inefficient. One gallon of warm water injected against the uterine orifice, in the presence

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* Vide, N. Y. *Medical Times*, July, 1853, for a report of Cases of Puerperal Convulsions, with the relations of Albuminuria thereto, by the author.

of Drs. Beadle and Metcalfe, physicians to the Asylum. Five o'clock P.M.—A third convulsion, followed promptly by a fourth, with no interval of consciousness, but the convulsions less violent, and recovery more prompt. Os unchanged. Half-past eight o'clock P.M.—Fœtal heart scarcely distinguishable. Seven drachms of the tincture of ergot given, followed by good pains for three hours, and then a quiet night.

January 2, nine o'clock A.M.—Os a little more dilated; fœtal heart beating. Three gallons of warm water injected, in a full stream, with Higginson's barrel syringe, followed by rapid dilatation of the os. Two o'clock P.M.—In the presence of my friend, Mr. Hunter Adam, an Edinburgh surgeon, I delivered her, without difficulty, of a still-born child, with forceps; and, finding the left arm of a second child at the pelvic brim, withdrew it, living, by the operation of version. No trouble with placenta.

The patient was now kept warm, and gentle saline cathartics, with diaphoretics, administered. She had a good "getting up," and ten days afterward was sitting by the stove, bright and happy.

On the following day she had a slight convulsion, and never again regained consciousness. She lived for two or three days, with scarcely any secretion of urine. Gin, beef tea, and Hoffman's anodyne, with strong counter irritation, were freely used, but with no effect

The post mortem displayed an advanced stage of Bright's disease of the kidneys.

Case 2.—Mary Goodwin, a primipara, æt. 32 years, a patient in Bellevue Hospital, fell in labor on Wednesday, June 13, 1855, at about noon. She was attended by Dr. Sawyer, one of the house physicians. The pains were efficient, and continued during the night. The membranes ruptured on the 14th, at half-past eight o'clock A.M., and although the expulsive efforts continued, the head did not advance. At mid-day she had a violent epileptiform convulsion, when chloroform was given for about half an hour. Urine now tested, and found albuminous. At two o'clock P.M. she suffered a second convulsion, lasting a minute and a half by the watch. My colleague, Dr. Taylor, and myself were then summoned, and decided that the woman should be delivered with forceps, which were well applied by Dr. Sawyer, and the woman delivered without much difficulty, full anæsthesia being maintained. The placenta proved adherent, and was detached by myself. The patient then had a refreshing sleep; convulsions did not recur; recovery speedy and complete. On the eighth day, however, the urine still showed traces of albumen.

Case 3.—The following report was drawn up by Dr. Levi Warren, the house physician in Bellevue Hospital, having charge of the case. The patient was seen in the night by Dr. Macready and myself, though the management was entirely left to Dr. Warren.

Margaret Maloney; æt. 17 years; primipara; delicate looking; complained for two days of some pain in the head, as well as in the right side and stomach. Some castor oil was given in the evening of October 11, which had operated twice by nine o'clock, when Dr. Warren was summoned, and found her breathing stertorously, with a pulse of 160, rather small, hard, and incompressible. Sinapisms to the feet were ordered, and an injection of assafœtida and turpentine. In five minutes a second convulsion came on, when she bit her tongue; a cork was then introduced between her teeth. A third and fourth immediately succeeded each other, merging into a convulsive paroxysm lasting about forty minutes, and only yielding to chloroform. Os dilatable, and about the size of a dime. Sclerotic conjuntivæ, at first pale and healthy in appearance, were now (ten o'clock P.M.) much congested; pupils, before natural, were now contracted; face flushed, livid, congested; breathing stertorous and labored; pulse 160, hard, small, and incompressible, as before; her head and shoulders being now somewhat elevated, she was bled from a good-sized orifice to about twenty ounces, when she showed signs of commencing syncope. Half-past eleven o'clock P.M.—Pulse 130; respiration 32, and quite easy. Half-past twelve o'clock P.M.—Pulse 115, full, soft, and compressible; pupils natural; respiration natural; some jactitation; not altogether conscious.

October 12, two o'clock A.M.—Quite restless; much jactitation; pulse and respiration as before; os dilated to the size of a twenty-five cent piece; labor pains now commenced; she recovered from her stupor, and became rational; membranes ruptured at three o'clock A.M.; head came to R. O. A. position, and at a quarter past four she was delivered of a still-born child, weighing five pounds and a quarter. Placenta came away immediately; urine albuminous, but not markedly so.

October 13, nine o'clock A.M.—Pulse 100, and quite feeble; some vertigo. At noon, pulse 112, and stronger; appears drowsy and indifferent to what passes.

From this time she continued to improve, requiring, for some two or three days, small doses of morphia, with a little brandy, and on the 30th was discharged well.

Case 4.—Mrs. G., a well-built and healthy primipara, æt. 25 years, confined on January 8, 1856, under the care of Dr. Bogert, and safely delivered of a female child. The labor was

in every respect natural, her health during gestation uninterruptedly good, though her legs had been much swelled toward its close.

January 10.—Dr. Bogert was summoned on account of a convulsion, which left her perfectly conscious. No milk as yet; lochia scanty. An eccoprotic mixture was ordered, and mustard draughts to her feet. Nine o'clock P.M.—During Dr. B.'s absence, and in consequence of his orders, I was sent for in great haste. On my arrival, I found her conscious, with her tongue severely bitten, and learned that she had just recovered from a severe convulsion. Pulse feeble, and very compressible. Urine not albuminous; no pain over the kidneys; no swelling of feet or face. Gave her a table-spoonful of a mixture containing equal parts of Hoffman's anodyne, tincture of hyoscyamus, and camphor water, and waited.

Another convulsion, of a well-marked epileptiform character, soon occurred, when I gave her chloroform, and kept her under its influence for three hours, after which time she slept pleasantly for the rest of the night. In the morning her bowels were well acted upon, and the milk soon after appearing, she progressed uninterruptedly to recovery.

Case 5.—On the 18th of May last, near midnight, I was summoned to Mrs. M., living in the suburbs of the city, who was in labor with her fourth child. I found a woman about thirty-eight years of age, well built and healthy looking, though her face was somewhat puffy, and most of her front teeth had been lost. She was utterly unconscious; pupils moderately dilated and sluggish; no shrinking from a lighted candle held close to the eyelids; pulse moderate in force and frequency; uterus flaccid. In a vessel by her bedside was a quantity of dark-looking fluid, which she had vomited, and her face and clothes were smeared with the same.

Her friends informed me that she had reached the full term of gestation, and had been seized at four in the afternoon with a convulsion, followed by a second, though utterly insensible from the first attack. On vaginal examination, I detected the os high up, largely enough dilated to admit two fingers, and allowing the head to be recognized through the unruptured membranes. Forcible manual dilatation being attempted, I was gratified to find the os yield to the efforts, and well-marked uterine contractions supervening, demonstrated the integrity of that organ. All my endeavors to appreciate the fœtal heart were foiled by the jactitations and extreme restlessness of the patient—restlessness contrasting strongly with the insensibility to the stimulus of light.

On questioning her relatives, I learned that her feet and

limbs had been greatly swelled of late, and that she herself had drawn attention, in a laughing way, to the extreme puffiness of her face in the mornings. Her physician, who lived several miles off, had been with her after her first convulsion, and had ordered a large dose of calomel and enemata, and, not believing her to be in labor, left, after desiring that he might be informed of her condition in the morning.

Repeating my efforts at manual dilatation, I was gratified to find them successful, and ruptured the membranes. Within two hours from my arrival, the os was sufficiently dilated to admit the forceps. Meanwhile, the patient had been twice most powerfully convulsed, presenting all the well-known phenomena of epileptic, puerperal convulsions in their best-marked form, each being preceded by vomiting of a thick, dark fluid, apparently containing blood. Immediately after the second of these, I placed her in position for the forceps. She was then so quiet from its effects, as not to need chloroform. I had brought with me, from a number of catheters, one of Weiss' gutta-percha catheters, taken at haphazard, which snapped in the urethra, and could readily be crumbled into fragments; as it was not possible to procure another, the bladder could not be emptied, and the specimen of urine was lost.

The head presented in the second position of Naegele, and, proving to be small, was withdrawn readily by throwing the posterior fontanelle in the hollow of the sacrum. It was a male, born living, and did well. The placenta came away readily, after which time the patient remained more quiet than before, and I left her between four and five A.M., recommending that she should be cupped over the kidneys.

May 20.—The husband sent for me in great haste in the afternoon, two more convulsions having occurred. I learned that some croton oil and enemata had been given some few hours after my last visit, and that, during the day of the 19th, she had had two convulsions. Her physician had been prevented from visiting her to-day. She was sleeping heavily; on shaking her, and telling her, in a loud voice, that she was the mother of a fine boy, she manifested some surprise, but almost immediately relapsed into unconsciousness. This was the first time that she had noticed anything. Unluckily, in my haste, I had brought no catheter. Shortly after this visit, she was freely cupped over the kidneys, and began steadily to improve.

June 4.—Being in the neighborhood, I called to see her, and found her about the house, intelligent but feeble. She has no recollection of what occurred, and I was prevented from making any inquiries. She complained voluntarily of pain in the head, which, she said, had lasted for some time previous to her

confinement. Her aunt told me that the urine was now voided in sufficient quantity, though it had been scanty. They also told me that she had lost several days in her reckoning of time, and had forgotten the erection of a neighboring shanty, which was built before her confinement. I urged continued counter-irritation to the lumbar regions and nape of neck.

Some of the material vomited was preserved in a glass bottle, and taken to Dr. Clark. This was examined with his accustomed kindness, and found to present the following appearances :—Blood corpuscles, mostly colorless, and dwarfed almost to a point by exosmosis ; a few only of natural size. Generally single, but a small number irregularly grouped. Epithelium from the deeper parts of the stomach tubes, for the most part of a brownish hue, becoming deep green in color when acetic acid was added ; also, epithelium from the œsophagus and mouth. A few masses, or aggregations of hœmatoidine of a dark color. Besides these, granules, which appeared to be debris, of an uncertain character.

Manual dilatation of the os uteri, in parturient women, has frequently proved of advantage in my practice. Indeed, as we can never estimate its dilatability until we have tested the matter experimentally, I think that so harmless a measure should be more frequently resorted to than is customary.

The non-recognition of this principle has, probably, cost many lives.

I remember a patient with placenta prævia, tamponned and stimulated to the utmost, but utterly exhausted from loss of blood, who was left undelivered for eighteen hours, simply because the os was no larger than a two shilling piece. Twice was the tampon removed, and replaced because the os had not increased in size. Finally, when further delay threatened death without delivery, version was attempted, when, to use the operator's emphatic words, the uterus yielded like wet paper, and the operation was rapidly completed. But the patient had gone too far to rally.

I have seen, within a few months, two other well-marked cases where manual dilatation has been of signal service.

Dr. Lee, one of the house physicians of Bellevue Hospital, asked my advice regarding a rigid os, where he had been using the douche ineffectually. On separating it with my fingers, I immediately stripped it over the head of the child, without difficulty.

Dr. Jno. C. Draper, at present one of the house physicians, sent for me in the night to a young primipara, in labor illegitimately, in whom the os had resisted the douche and belladonna ointment. It was described to me as hard, dry, and un-

yielding as steel. And so, indeed, did it appear to me; but, on introducing my fingers within its rim, in an instant I procured full and complete dilatation, when Dr. Draper successfully delivered her with forceps. Mother and child have since made a good recovery.

Since the above was written, I have been called to a case so interesting in this connection, that I am induced to publish the details.

Case 6.—Margaret Jenkins, unmarried, primipara, æt. 22 years, fell in labor in Bellevue Hospital during the night of July 22, and was seen by Dr. Cobb, house physician, at about four o'clock A.M., July 23. The head was presenting, the os dilated to the size of a dollar, thick and undilatable. By noon it had dilated to nearly double its size at the first examination, but very rigid, and not yielding to the strong pressure of the head. After consultation with me, Dr. Cobb injected about two gallons of warm water steadily within the os. This was done at two o'clock P.M.; and when I saw the patient at four o'clock P.M., the os was fully dilated, soft and thin. At this time the head had nearly completed the movement of descent; the posterior fontanelle was directed to the left acetabulum; fœtal heart heard on both sides of the abdomen, with the *summum* of intensity to the left. No uterine souffle. Membranes ruptured. On moving the head with the finger, some liquor amni would escape. Vagina cool and moist.

The patient was a strongly-built, well-developed woman, with a feeble pulse. The legs being much swelled, and the face puffy, Dr. Cobb drew off the urine which proved to be densely albuminous. On questioning the patient, she said that her limbs had been swelled for about a month, and that her urine had been scanty, although, now, natural in quantity. She complained of a peculiar nervous, tremulous feeling, which had come on the day before, and stated that she had seen bright spots and flashes before her eyes. She now suffered from headache, for the first time since her stay in the hospital (a month). Pain complained of when pressure was made over the right kidney. Ordered a strong stimulating injection of salt water with turpentine.

Convulsions apprehended. The question now arose, whether, under the circumstances the woman should be anæsthetized and delivered with forceps, or await unaided termination of the labor. Unquestionably, the symptoms in the case were such as forerun puerperal convulsions, in the majority of cases. The tremulousness, the headache, and the flashes of light might well be considered of doubtful value in many women, but this one, was perfectly calm, free from apprehension or excitement, and

admitted the illegitimacy of her child in the most natural manner. I believed then, and believe now, that immediate delivery gave the patient the fullest advantage of the obstetric art; still in deference to the unsettled state of laws for obstetric interference, and to the possibility of her extricating herself from the impending risk, I determined to give her two hours more.

By this time, although the pains were good, no advance had been made; the woman was sighing, and appeared weaker; had vomited a greenish-colored fluid several times, and complained more of headache and nervous symptoms.

Dr. I. E. Taylor being sent for, agreed with me in the propriety of terminating the labor, and so soon as anæsthesia had been induced, I delivered her with forceps. The operation required strong tractive efforts. Child born alive, and weighed seven pounds and a half, she has since done well. Placenta gave no difficulty. The patient was cupped over the kidneys on the next day, was kept warm, and bowels freely moved. On the 26th there was no albumen in the urine, and she is doing perfectly well.

It is to be hoped that the time will shortly arrive when the importance of this symptom of albuminuria in pregnancy will be so generally appreciated, that women will not be allowed to proceed to their labor without any advantage from prophylactic treatment. Precise information can be so readily obtained in the majority of instances, that neglect reflects reproach on the unwary practitioner.

A friend of mine was called suddenly to a young primipara in a very wealthy family in this city, found her dying from convulsions, her physician having just delivered her of a living child, with forceps. The expression of her face and the condition of her limbs made him at once suspect the true state of things, and he drew off some water which he gave to me. It was loaded with albumen. Are not such cases of frequent occurrence? and, are they not overlooked in an unjustifiable manner?

I have made it a rule, in my own practice, to obtain a specimen of the urine, *sanguinis*, in all my patients, with any puffiness or œdema. I have not found it to excite any feeling of apprehension. On the contrary, it seems rather to inspire confidence.

43 West Thirty-Second Street.

ART. IV.—*Opacity of the Cornea Removed by an Operation.* By C. R. AGNEW, M.D., Surgeon to the New York Eye Infirmary.

P. K. a German, æt. 41 years, came under my care, at the New York Eye Infirmary, in April, 1856, for superficial opacity of both cornæ.

He stated that, fourteen weeks previously, he had had his face and eyes burnt by the explosion of a gunpowder blast, that his vision was not materially impaired at first, but that it began to fail on the occurrence of inflammation and continued to diminish until, at the expiration of three months, perception of sight alone remained. During the progress of the inflammation various collyria were employed, and when using a solution of acetate of lead, he became rapidly blind.

Up to the day of his admission to the infirmary, he had constantly suffered from photophobia, lachrymation, and a continued sense of ocular distress, which at times amounted to severe pain, and spread to circumorbital parts.

Rest and consequent recovery from the fatigue of his recent journey, enabled us on the day following his admission, to make a careful inspection of the eyes. Upon the centre of each cornea was a white enamel-like, circular patch, which, diminishing in opacity toward its periphery, disappeared in a narrow setting of transparent cornea, about a line in breadth. The patches reflected light quite brilliantly, and a thin substance seemed to be deposited beneath the epithelial layer, and either external to, or imbedded in, the external elastic lamina.

With the assistance of atropine, we could observe, by an oblique glance, that the pupil was free in both eyes, and largely dilated. There was considerable zonular vascularity, and conjunctival redness, both of which were increased by the efforts made to expose the globe.

As the opacity seemed to be superficial, and no hope could be entertained of procuring its absorption by topical or general medication, I determined to resort to an operation.

The patient was accordingly placed in a supine position and profoundly etherized. The right cornea was then exposed by means of a spring speculum, and motion of the globe anticipated by a grasp upon the conjunctiva with a pair of forceps. With a Beer's knife I first scraped off the epithelium, which proved to be the covering of the opacity, and the occasion of its lustre, and then, by a scraping and picking motion, attempted the removal of the foreign substance. From the centre of the cornea, a white scale nearly a line square was removed by an easy motion of the knife, disclosing a transparent cornea.

The removal of the patch increased in difficulty as we approached its periphery, where the particles of earthy matter seemed to be glued together, and to the external elastic lamina, by lymph or thickened epithelium. Especial difficulty was encountered in endeavoring to pare away the opaque substance from the margin of a little pit, in which still rested the insoluble debris of a granule of powder. We were much pleased to find our scraping rewarded, however, by a tolerably clear view of the iris. The same procedure cleared the left cornea of a similar opacity.

On the patient's returning to consciousness, he complained of greatly increased photophobia, a condition now easily explained by the absence of the corneal epithelium.

The closure of the eyes by strips of adhesive plaster, and confinement in a darkened room, relieved the patient of the photophobia.

No symptoms indicating interference occurring, the eyes were kept closed, and occasionally bathed with tepid water, until the fifth day, when, on removing the adhesive strips, the corneæ were found glistening as if covered by epithelium, and free from any considerable opacity. Where the periphery of the patches had been, was a faint line of a bluish-white color, and in one or two places over the general corneal expanse, there were little specks, but not amounting in the aggregate to any serious obstruction of vision, as was evinced by the patient's ability to read the text of an ordinary German Bible.

Three months from the date of discharge from the Infirmary, which happened ten days after his admission, I received a letter signed by him, but written by his employer, in consideration of the inability of the former to write English, in which he says that his eyesight is not only sufficient for the ordinary purposes of a farm-life, but such as enables him to read with ease.

The scales and scrapings were kindly and carefully analyzed by Professor Doremus, who reported an entire absence of signs of lead, but unequivocal indications of the presence of an earthy salt; which evolved, under the action of an acid, carbonic acid.

I would not have delayed so long upon the description of the above case, if I had not been convinced of its intrinsic interest.

Those who are familiar with the history of corneal ulceration, and consequent cicatrization, will not expect to remove such opacities as have their lodgment in the tubular structure, but there is a class of cases in which the above is included, for which an operation promises much.

Mr. Bowman, who was, I think, the first ophthalmic surgeon to remove corneal opacities, though it has since been accomplished by Dixon, of London, and others, gives an interesting account of the removal of earthy deposits from the cornea, in the appendix to his *Anatomy of the Eye.*

In addition to the case which I have so imperfectly related, I have since removed smaller opacities with great facility. The fact, as indicated in P. K.'s case, of the deposit of the opaque substance upon the external elastic lamina, where it is covered by epithelium, is enough to shake our confidence in the entire list of those collyria which are used to promote the absorption of corneal opacities. For any collyrium which would induce a solution of the substance forming the opacity, must exercise its influence through the epithelium.

We do, it is true, see opacities of the cornea in children gradually become thinner as life advances, but it is very doubtful if, even in them, who have the advantage of both repair and growth, a cicatrix, which involves the laminated or tubular structure, ever loses its whiteness.

We so commonly see opacities of the cornea which can be directly traced to the use of saturnine collyria, that it becomes a question whether they should not be banished from use in those inflammatory diseases of the eye that may induce ulceration of the cornea.

Indeed, is there not a good deal of heresy as to the proper treatment of ulcers of the cornea? I have, in my limited experience, more than once known an ulcer of that tissue, which had grown worse under misapplied topical treatment, rapidly heal up under the constitutional effect of a few doses of bark and soda. It is true, that we should not neglect local treatment, but as a general rule, the use of lead collyria has either been inoperative for good, or productive of opacities. It is true that in P. K.'s case, the scales removed did not respond to the tests for lead, but who has not seen, while using lead washes, opacities of the cornea come on in such a manner as to preclude a doubt as to their origin?

And it matters not whether the opacity be an actual deposit of a salt of lead, or the result of mal-nutrition induced by its pressure merely in bathing the eye.

But since, in consenting to communicate this case, I did not promise a rambling disquisition upon corneal disease, I must close. I will, hereafter, endeavor to contribute some remarks upon the treatment of ulcer of the cornea.

ART. V.—*To What Degree are the Intellectual Faculties Affected in Cases of Apoplexy and Hemiplegia?* By BENJAMIN W. M'CREADY, M.D., Physician to Bellevue Hospital.

A CASE now pending in one of the courts of our city, has directed the attention of the profession, very generally, to the condition in which the mind is left after recovery from the first overwhelming effects of an apoplectic seizure, and the opinion has been expressed by many physicians that, while in all cases the mind is more or less impaired, in severe ones the patient is apt to be reduced to a condition of partial or complete imbecility. Systematic writers on the practice of physic give often some color of support to this opinion: thus Valleix (*Guide du Medicin Praticien*, Paris, 1853,) says, "it is rare that a moderately severe attack of sanguineous apoplexy does not produce a certain degree of alteration of the intellectual faculties; sometimes it is the memory which is lost, sometimes the facility of transacting business, the power of conception, etc. It is even common for individuals to remain in a condition of marked stupidity and idiocy, which, joined to the paralysis they present, renders them easily recognized; they weep and laugh without cause, and exhibit the condition of old men fallen into dotage." Quotations of a similar purport, though rarely so strongly worded, could readily be multiplied if necessary. It is evident that the question can not be settled by weighing authority against authority, and that the impressions of even well-informed and experienced physicians are only valuable in so far as they are founded upon carefully observed facts. New observations directed mainly to the condition of the mind, might be liable to the charge of bias in the interpretation of the facts on the part of the observer, but this objection can not hold in regard to cases recorded by competent authority, and for a different purpose, provided they be taken indiscriminately. A proper analysis of such cases, assuming it includes a number sufficiently great, must represent the condition of the mind after apoplexy under ordinary circumstances.

Mr. Copeman (*A Collection of Cases of Apoplexy*, London, 1845,) has recorded from various authorities, two hundred and fifty cases of apoplexy; of these one hundred and seventy-five died without recovering from the immediate effects of the apoplectic seizure; of the remaining seventy-five cases, twenty-five have been rejected, because, from the detail of the cases given, evidence was wanting of their proper apoplectic character. Some of them were plainly cases of renal disease, others of puerperal convulsions, others of profound narcotism from alcohol, in two cases the attack might have been hysterical, and some were of doubtful character. All the cases thus rejected, are stated

to have recovered, and no mention is made of any imperfection or unsoundness of mind having been left by them.

Of the fifty cases of apoplexy with or without hemiplegia, which were analyzed, twenty-six were of apoplexy without paralysis, of these, eighteen are stated simply to have recovered.

In one of these cases (83 of Copeman from Abercrombie), a lady, 82 years of age, was seized at church with coma, lasting some days, attended with convulsions and apparent paralysis of the left side; she was restored to her usual health. This patient had had an apoplectic attack four years previously. In one case (90 of Copeman from Cheyne), the patient had had three previous attacks, the first of which had left his right arm paralyzed for twelve weeks.

In two of the twenty-six cases (7 and 150 of Copeman), it is stated, respectively, that after recovery the "intelligence was sound," and the patient was "clear in the head."

In one of the cases (141 of Copeman from Portal), the patient's health was re-established, but he did not recover his memory until some months afterward.

In twenty-four cases the apoplexy was attended with hemiplegia.

In sixteen of the twenty-four they are reported to have recovered perfectly, with the exception in some instances of slight paralysis still remaining; in two instances (116 and 120 of Copeman from Bright's *Medical Reports*), the patients are stated to have returned to their occupations, one as servant, the other as porter at a gate. In two of the patients, several years after their recovery, death occurred from a second attack.

In Case 117 (from Bright's *Med. Reports*), the patient was insensible for twenty-four hours; when he recovered his consciousness both the arm and leg of the left side were found to be completely paralyzed and the speech affected; in three months he left the hospital, having no complaint but a little unsteadiness of his gait.

Of the remaining, two (2 and 4 of Copeman from Darwin) are reported to have recovered, with the exception of some paralysis and difficulty of speech.

Case 23 of Copeman (from *Med. Gaz.*, vol. xxiii., p. 455), though recorded as one of apoplexy, was rather a case of softening of the brain. Seven years previous to the final attack, the patient had been seized with a fit, and was, for a time, insensible, and his whole body paralyzed. For six weeks before the attack, he had giddiness and pain in the head; when about to take hold of any object, he would find his hand clenched before reaching it. He fell in a "fit," recovered his consciousness in five minutes, but his left side was completely paralyzed, and its sensibility lessened. "Although he was sensible, the energies of his brain and nervous

system were impaired, and his muscular power consequently diminished. He lay helpless upon his back, and passed his motions and urine in bed." Improving somewhat, "the dejections and urine were passed less frequently in bed, and he would make signs for the urinal, and so on; he understood what was said to him, yet he was much embarrassed to answer; he could not find and put together the necessary words, but, when he could command one or two words, they were appropriate and well articulated." The patient died of gangrene of the affected thigh, and "large, deep sloughs upon the back," two months after the date of the attack. On post-mortem examination, about three ounces of serum were found under the arachnoid and in the ventricles; the spaces between the convolutions were large, and the brain seemed small for the cranium. The anterior superior surface of the anterior lobe of the right hemisphere of the cerebrum was depressed, yellow, and softened. The softening extended along the whole of the surface of the anterior lobe contiguous to the falx, and affected, likewise, a part of the middle lobe, reaching downward to the corpus callosum.

In Case 30 of Copeman, the patient, a female 73 years of age, was stricken with apoplexy; she lost her speech but preserved, to a considerable degree, her intellect. Death took place forty-eight hours after the attack. The posterior lobe of the right hemisphere was found "to be a quagmire of extravasated blood, the cerebral substance having been torn up and a vast depot collected there."

In Case 50 of Copeman, (from *Med. Chirurg. Rev.*, vol. xiv., p. 234,) the patient, a fat woman, 65 years of age, was brought into St. Thomas' Hospital ten days after having been attacked by apoplexy. She had hemiplegia of the right side, was still somewhat lethargic, but "quite sensible to what was addressed to her, though unable to reply" except by signs. She gradually improved for five days, having become able to sit up, when a second attack supervened and carried her off. A large surface of the left hemisphere was covered with blood, effused beneath the arachnoid, some was found external to that membrane. The ventricles contained half a pound of blood which had proceeded from a small aneurism in the middle cerebral artery.

In Case 100 of Copeland (from Bright's *Med. Reports*), a gentleman, 73 years of age, on suddenly receiving news that his partner had absconded, reducing him from affluence to penury, fell insensible in an apoplectic fit. After a time he recovered sufficiently to *write for one of the weekly journals*, although his memory became defective, and his mind frequently confused. He was weak, too, and his wife thought that the weakness was greater on the right than the left side. Ten months afterward, he had a second attack, of nearly equal severity; this left him much feebler, and with his head symptoms considerably increased, and thenceforth he was unable to engage in any occupation. Thirteen months

after the second, a third seizure occurred. His condition now varied between partial coma and delirium, though occasionally he would answer coherently. His right hand, as well as both legs, were paralyzed. The legs were drawn up, and any attempt to straighten them produced pain. He remained in this state from June 24 to February 3, when he became more conscious, talked rationally to his wife, and knew those about him. The improvement continued two or three days, then coma supervened, and he died February 9th. On post-mortem examination, there was injection of the pia mater, and serum contained beneath the arachnoid; the ventricles were distended with fluid, and there was a large quantity effused at the base of the brain. In each of the posterior lobes of the brain there was a softened spot of the size of a shilling; there was no appearance of ruptured vessels, nor of clot, unless the softened places might have thus originated.

In Case 137 of Copeland (from *Portal*), a gentleman, 76 years old, was seized with apoplexy, and, on recovering consciousness, was found paralyzed in the left arm. He regained sensation and motion completely, "but out of twenty words which he pronounced, there were eighteen not understood, and the other two were misapplied. It was reported in Paris that he was mad, but I saw it was less a loss of reason than of the power of expressing himself." The patient lived several years, strong and vigorous, and finally died of fever.

In Case 164, Copeman, (*Hist. Anatom. Med.*, p. 156,) a lady, 60 years of age, was, while in a fit of passion, seized with apoplexy, and became hemiplegiac. When consciousness returned it was found she could not speak. "The patient was not cured, though she had recovered her senses; she lived some time with a hemiplegia, and without being able to articulate a word."

In all, out of a record of two hundred and fifty cases, fifty cases have been taken, in which the patient had recovered from the first effects produced by the apoplectic stroke. They are all the cases contained in the book, in which such recovery had taken place, and in which the cases were clearly of an apoplectic character, yet, in no one of the cases, is there the slightest indication that the patient was left with a mind, I will not say reduced to a state of imbecility, but impaired in any marked degree. They all, as far as the mind was concerned, with the exceptions to be mentioned, recovered; recovered perfectly; were restored to their usual state; returned to their previous occupations. In two instances the faculty of speech was either deranged or lost, and in those instances their physicians assert that the faculty of language, not reason, was deranged. In the third instance (100 Copeman from Bright), the patient is stated to have recovered with an impaired memory and with some confusion of thought; but a merchant, 73 years of age, who, after

partial recovery from a severe apoplectic seizure, is enabled to labor for his support by writing for the weekly papers, may be esteemed to have still possessed a fair share of intellect and energy. The second attack left him yet more prostrate, very much weakened in body, and unable to do anything for the support of his family. From the third attack he never recovered; still there is nothing like imbecility; he lies for months in a feverish condition, alternating between coma and delirium, and even from this state, a few days before his death, he partially recovers and talks in a rational manner with his wife.

If exception may be taken, by some, to the cases from Copeman, though I can not discover the slightest ground for it, the following series is open to none whatever, and the results derived from them, agreeing perfectly with those already arrived at, give them additional strength and value. Andral (*Clinique Medicale*, vol. v., p. 306), under the head of "Hæmorrhage of the Cerebral Hemispheres," details 17 cases of apoplexy. Of these cases, death occurred in nine instances at periods varying from two hours to twenty-five days from the apoplectic seizure, and previous to the patients recovering completely from its primary effects.

In one of these cases, (IV^e^ Observation, p. 316,) the patient, a house painter, 55 years of age, was suddenly seized with loss of speech and complete paralysis of the right side, but retained his consciousness. On the nineteenth day "his intellectual faculties appear unaffected (*intactes*); he endeavors to answer when he is questioned, but is unable to articulate a word. This abolition of speech has persisted from the entrance of the patient into the hospital." He died on the twentieth day, having become comatose a few hours previously. On examination after death, besides great injection of the vessels of the pia mater, there was "in the midst of the posterior lobe of the left hemisphere, behind and without the optic thalamus, which is unaffected, a cavity large enough to hold a lady apple, which was filled with blood of the color of iron rust, partly liquid and partly coagulated. The walls of the cavity are lined by an exceedingly delicate cellular membrane. The cerebral substance surrounding it has a delicate rose color, and is slightly softened to the depth of some lines."

In another case, (VI^e^ Observation, p. 322,) a stout woman 55 years of age, who, four years previously had had a slight apoplectic attack from which she had entirely recovered, suddenly lost all consciousness, and was paralyzed on the right side. Taken to the hospital eight days afterward, she was still somewhat stupid, the limbs of the right side were completely paralyzed, there was paralysis of the right upper eyelid, the right eye was turned outward, she was hard of hearing and unable to protrude the tongue; the urine and fæces were passed involuntarily, and there was com-

plete loss of voice and speech. "The patient heard and understood what was said to her, but was able to answer by signs only." On post-mortem examination, in the interior of the middle lobe of the left hemisphere, without and a little above the point of junction of the optic thalamus and the corpus striatum, there was a collection of blood (about six ounces), partly liquid, partly coagulated ; an unorganized, fibrinous layer lined the cavity containing the blood, around which the brain was softened to the depth of two or three lines.

In the eight remaining cases, the patients recovered from the primary effects of the apoplectic seizure, and died, at various periods afterward, of other diseases. In seven of these cases, the understanding is represented as perfect ; in one the patient had fallen into imbecility.

In the *first* of these (VII^e^ Observation, p. 325,) a wig maker, 71 years of age, fell deprived of consciousness, and on recovering his senses, some hours afterward, the whole right side was found to be paralyzed. Entering La Charité six weeks from the attack, the right side was still motionless, and its sensibility very much impaired, contraction of the limbs of that side gradually took place, and the right arm and leg became atrophied ; two large carbuncles appeared in succession on the left side, and the patient died exhausted, a little better than seven months after the attack. For the last two months the urine and fæces were passed involuntarily. "In the midst of such serious derangements of motion and sensation, the understanding is preserved unaltered." On post-mortem examination, about the middle of the right hemisphere, near the convolutions of its upper surface, a cavity was found capable of holding a middling sized apple, containing a sort of *bouillie*, of the color of iron rust. Its walls were lined with a dense, strong cellular membrane, traversed by numerous vessels, and adhering closely to the substance of the brain, which was raised along with it. The cerebral substance surrounding this membrane was softened to the depth of four or five lines.

In the *second* case, (VIII^e^ Observation, p. 328,) a turner, 61 years of age, suffering under symptoms of heart disease, was seized with apoplexy ; in about a quarter of an hour, his faculties, sensorial and intellectual, resumed their natural condition, but his left arm was weaker than the right. At the end of nineteen months from the attack, the dyspnœa, palpitations, and vertigo, under which he suffered, became so troublesome that he was forced to give up work. He died, five months afterward, of pulmonary apoplexy. On examining the body, about the centre of the middle lobe of the right hemisphere, a cavity existed, two inches in longitudinal, and one inch in vertical extent, containing a few drops of serous fluid, and lined by a thin, smooth, consistent membrane.

In the *third* (IX^e^ Observation, p. 332), a woman, 48 years of age, fell deprived of sense and motion ; recovering her con-

sciousness, two hours afterward, her left side was found completely hemiplegiac. The next day she entered the hospital ; her understanding was clear, and she answered all questions readily. She improved rapidly, when diarrhœa supervened, of which she died fifteen days after the attack. On examination, a small cavity was found in the middle of the right corpus striatum filled with clots of blood.

In the *fourth* (X^e^ Observation, p. 335), a hair-dresser, 46 years of age, entered La Charité, suffering under phthisis. A year previously he had had an apoplectic attack, and when consciousness returned, was paralyzed on the left side. The paralysis gradually became less, but he still dragged the left leg in walking, and the arm was weaker than the one of the opposite side. Three months after entering the hospital he died of phthisis ; his intellect was clear to the last. On examination, besides a considerable amount of serous effusion in the ventricles, a cavity was found in the right corpus striatum, an inch in length by an inch and a half in breadth, filled with matter of the color and consistence of a concentrated decoction of chocolate. Its walls were not lined by a false membrane, and around it, the substance of the corpus striatum was transformed into a yellowish pulp to the depth of half an inch.

In the *fifth* case (XI^e^ Observation, p. 337), a man, 67 years of age, suffering under an advanced heart disease, of the consequences of which he died, had, six weeks previous to his death, an attack of hemiplegia of the left side, without loss of consciousness. The paralysis continued complete ; "he was in the full possession of his intellect." On post-mortem examination, in the centre of the right optic thalamus there was a cavity, which would hold a large cherry, filled with blood which resembled thick, black, gooseberry jelly.

In the *sixth* (XII^e^ Observation, p. 339), a woman, 60 years of age, entered La Pitié, laboring under chronic peritonitis, of which she died fifteen days afterward. The right side was completely paralyzed, and its sensibility was very much impaired. The hemiplegia had supervened four years previously during sleep. "Her intellect was exceedingly well preserved." On post-mortem examination, there was a cavity in the left crus cerebri, filled with greenish serum, which would have held a cherry ; its walls were lined with a dense, tough fibro-serous membrane ; and surrounding it, some lines in depth, the nervous substance was of a pearl-white color, and as hard as cartilage.

In the *seventh* case (XVI^e^ Observation, p. 348), a woman, 68 years of age, entered La Pitié, laboring under carcinoma of the stomach. Nine years previously, she had suffered an attack of apoplexy, which confined her for two years to her bed, because, according to her account, during that time she was deprived of the use of her limbs. Afterward, she slowly, but entirely, recovered of her paralysis. Her intellect was perfect. She died a month

after entering the hospital. On examining the body, about two inches beneath the upper surface of the right hemisphere, at the point of junction of its two anterior with the three posterior fifths, there was a small cyst, with smooth and transparent walls, filled with limpid serum. In the opposite hemisphere, on the level and without the middle of the corpus striatum, a second cyst was found exactly resembling the first.

In the *eighth* case (XVII^{e} Observation, p. 349), a man, 69 years of age, had suffered an attack of apoplexy, twenty-two years before entering La Pitié ; since that time the limbs of the right side, although he can move them, remain weak. The "intellect of the patient was singularly obtuse," and those who brought him to the hospital said "that for a long time he had been childish." In a short time he died of pneumonia. On examination of the body, there was considerable serous infiltration of the pia mater of both the convexity and base, and the lateral ventricles were distended by a large quantity of limpid serum. In the substance of the *left* corpus striatum, a cavity was found lined with a yellowish membrane, apparently unorganized, filled with a limpid serum, and large enough to hold a hazel nut, on the outer side of the *right* striated body, a second cavity was found similar to the preceding one, but of at least twice its size.

Here at length is a case in which the mind was reduced to a state of apparent imbecility! In commenting upon it, Andral observes, "the state of dotage into which the patient had fallen may be explained by the large quantity of serum which filled the ventricles." Was it not rather one of those cases in which the atrophy of the brain, sometimes occurring naturally in advanced age, has come on prematurely, in consequence of a double apoplexy of long standing, hastened, doubtless, by the state of comparative isolation and neglect, in which an indigent man would necessarily be left under such circumstances, while the serum was effused merely to take the place of the atrophied brain?

Under the head of "Congestions Cerebrales" Andral details five cases. In four of these the attack was apoplectic ; three of them were attended with hemiplegia. In three cases the patients died, consciousness not having perfectly returned ; in a a fourth, hemiplegia, unattended with loss of consciousness or impairment of intellect suddenly supervened ; three days afterward, the patient lost consciousness, became comatose, and died in a few hours. In the fifth case, there was febrile delirium supervening on phthisis, and followed, after two days, by fatal coma.

In the *resume*, under the same head, Andral details two cases of apoplexy. The first (p. 358) occurred in a man, 45 years of age, already idiotic, and affected with general paraly-

sis. It was speedily fatal, and two ounces of blood were found effused between the "two layers of the cerebral arachnoid." In the second case (p. 293), a carpenter, 74 years of age, with an enlarged heart, while being bled for a sense of weight and stiffness in his left limbs, of which he complained, fell senseless. Consciousness returned in an hour, but the left side remained completely paralyzed for twelve days. The paralysis then gradually disappeared, and the intellectual faculties were perfectly restored. In the *resume*, under the head of "Cerebral Hæmorrhage," two cases of apoplexy are mentioned. In the first, a woman was suddenly seized with violent, motiveless, fits of anger, resembling mania; the same night she was attacked with fatal apoplexy. In the second, a man became incapable of labor, stupid, and sleepy; this condition terminated in apoplexy. These instances comprise all the cases of apoplexy I have been able to find in the *Clinique Medicale*.

In Cruveilhier (*Anatomie Pathologique*) eight cases of apoplexy are detailed, in which consciousness was either not abolished or returned before death.

In the first of these cases (V^e^ Liv., p. 3), a female, 62 years of age, entered the Maison Royale de Santé, with incomplete left hemiplegia; eight days previously, she had been suddenly seized with complete paralysis of the left side, but had since somewhat improved. She had some fever and slight delirium; her intellectual faculties were nearly (*a peu pres*) in a normal condition. Phlegmonous erysipelas, of which the fever was a forerunner, declared itself, and she died on the twenty-fifth day. "Up to the day of her death, she answered very well the questions I asked her." The convexity of the brain, on a level with the right parietal fossa, was of a brown color, and gave a feeling of fluctuation as if there existed at that point a cavity, partly filled with water, and a fluid of a deep chestnut-brown hue flowed from an incision made in it. The clots filling the cavity were of the same color. The cavity occupied the whole thickness of the central medulla of the right hemisphere; on one side reaching to the convolutions, of which many had disappeared, on the other, lined by the reflection of the corpus callosum; it communicated by a narrow opening with the posterior horn of the lateral ventricle, which, enormously developed, was of itself larger than all the rest of the ventricle.

2. A painter, 65 years old, was brought to the Maison Royale de Santé, with entire loss of motion of the left side. The understanding was perfect. A month previous, the patient had been attacked with apoplexy, which left him as if dead. The patient died five days after entering the hospital, with stertorous breathing, but having full possession of his intellect until the last moment. On examination, the lateral ventricles were enormously

dilated and filled with a limpid serum. In the wall of the left lateral ventricle there was an apoplectic cavity, lined by a finely-organized cellular membrane, which occupied the posterior part of the corpus striatum and the exterior of the optic thalamus.

3. A woman, of whom there was no history, was in the Salpetriere suffering under right hemiplegia, which had lasted six months. Her intellectual faculties were perfect; death took place from œdematous pneumonia. On examination, one of the convolutions of the right hemisphere, by the side of the median fissure, presented a loss of substance as if removed by a sharp knife; a fine cellular layer, of a yellow color, attested the age of the injury. In the medullary centre of the brain and near the fissure of Sylvius, there was a small cavity, with colored walls, traversed by cellular tissue, and filled with serum. Two small colorless cavities were found in the corpus striatum, near the floor of the ventricle.

4. (XXXVI[e] Liv., p. 4.) A woman, 80 years old, is brought to the infirmary of the Salpetriere, November 9, for an infiltration of the left lower extremity. On the fifteenth, it is found that there is left hemiplegia, both motion and sensation being greatly impaired, the condition of the limbs, however, varies, sensation as well as motion being at one time much less impaired than at another. On the nineteenth, rigidity of the right arm was noticed; this disappeared on the next day. On the twenty-third, the right side seemed paralyzed as well as the left. She died on the twenty-fourth, preserving her intellect to the last. On examination, in the cavity of the arachnoid, a thin layer of recently effused, coagulated blood, occupied the convex surface of both cerebral hemispheres. Under the cerebral arachnoid was a layer of serum, two lines thick, which being permitted to escape, the brain no longer filled the cavity of the cranium. There was phlebitis of the longitudinal sinus, extending for an inch into the lateral sinuses, characterized by adherent, coagulated blood, without change of color, and by decolorized clots, of the consistence of false membrane. There was similar phlebitis of the superior cerebral veins. Denuded of its membranes, the right hemisphere of the brain presented every degree of red softening, or capillary apoplexy. It had invaded a great many points of that hemisphere, both on its internal and external surface. The centres of softening, which are exceedingly numerous, occupy the anfractuosities. There are centres which occupy only the superficial layer of the cineritious matter, others half, others its whole thickness. *Many* convolutions of the internal surface of the hemisphere, and of the fissure of Sylvius, present buckskin-colored cicatrices, which seem to me to belong to old, cured softenings. Some offer a loss of substance, as if cut by a knife, and are indented and covered by a delicate buckskin-colored pellicle; others are formed of a yellowish pulp, which replaces the convolution destroyed. A great number of buckskin-colored cicatrices are found. Pus was found in the

primitive and internal iliac veins of the left side, as well as in the vena azygos.

5. (XXXVII^e Liv., p. 1.) A woman, 55 years of age, was admitted into the Salpetriere as an incurable, in consequence of three successive apoplectic attacks, which had left her permanently lame. "Her intellectual faculties were perfect." The next day she was again attacked with hemiplegia of the right side, together with great difficulty of articulation. "She looked amazed, stupid, but she possessed her understanding; she only lacked the means of expression." She wept whenever questioned, but appeared to comprehend. Four days afterward, the report reads—"Decubitus always dorsal, immobility, countenance heavy, tears, intelligence." The patient died eleven days afterward, apparently of pneumonia. On examining the body, a cavity, containing coagulated blood, was found in the right hemisphere, formed at the expense of the optic thalamus and of that part of the striated body external to it. In the external wall of the cavity a cicatrix was found, composed of two dense membranes, joined together by a loose laminated tissue; in the striated body of the other hemisphere there was a similar cicatrix. The right half of the cerebellum was but a moiety of the size of the left, many of its lamellæ having been destroyed and replaced by a brownish, yellow cicatrix. In the anterior circumference of the right lobe of the cerebellum was a depression which received a tumor springing from the petrous portion of the temporal bone, and apparently carcinomatous.

6. (XXI^e Liv., p. 3.) A stout woman, 52 years old, was brought to the Salpetriere May 3, 1829, in a state of hemiplegia, which came on one or two years previously, and which did not vary until her death. In October, 1832, her condition was as follows:—"Right hemiplegia, incomplete as to sensation, complete as to motion, accompanied by rigidity of the paralyzed limbs; *absolute incapability of articulating sounds.* Every effort of the patient ends only in inarticulate sounds and an unintelligible stammering, interrupted by plentiful tears and sobs; tears and sobs, such are the only means of expression in her power, and she uses them largely, for it is enough * to approach her bed, to feel her pulse, to speak to her, to provoke an abundant flow of tears, a purple color of the face, and convulsive action of the muscles of respiration; deglutition is embarrassed, and the patient makes us understand, by gestures with her left hand, that the pharynx acts with difficulty."

"The intellect is sound and complete; her scrutinizing look seems to divine one's thoughts; she expresses, by motions of the head, by inarticulate sounds, that she is filled with all the horror

* In commenting upon the above case, Cruveilhier mentions five other cases of hemiplegia, with deprivation of speech. In one, the intellect was sound; in the other cases, no note is made of its condition.

of her position. It is, above all, when she is not understood, that we can judge of her intelligence; her left hand, her eyes, the motions of her arm, of her head, her tears and convulsive sobs, form a language truly painful to the observer; but as soon as she is understood, tears of joy and approving gestures replace the expression of grief and impatience." The alvine excretions are involuntary, and the motions of the *left* arm are somewhat impaired. Death took place June 3, 1834. On post-mortem examination, there was considerable serous effusion under the arachnoid and at the base of the brain. The annular protuberance is small and deformed, presenting on its inferior surface two cicatrices, with loss of substance, the one on the left being deep and penetrating almost the whole thickness of the protuberance. The left anterior pyramidal body was destroyed; the right atrophied. *

7. (XXXIII^e Liv., p. 6.) A woman, 63 years old, was suddenly seized with hemiplegia, and greatly impaired sensation of the left side; there was some rigidity of the left arm. The intellectual faculties were preserved. Two days afterward, the patient died of pneumonia. A considerable extravasation of blood had occurred in the body of the (right?) corpus striatum; a second, of the size of a small walnut, in the substance of the posterior convolution; in addition, there was a prodigious number of miliary extravasations, most of them upon the surface of the brain, some buried in the cineritious matter.

(XXXIII^e Liv., p. 2). A woman, in the ward St. Gabriel, was under my observation for a year. There was complete hemiplegia of movement on the right side; absolute inability to articulate, with preservation of sensation and intellect; "always gay, reaching me her hand at every visit, expressing her gratitude by the most meaning gestures; occasional epileptiform attacks." During one of these attacks she died. On examination, the convolutions of the whole of the striated body were replaced by a membrane of the color of buckskin (*peau de daim*), and there was destruction of the external two-thirds of the optic thalamus, extending as far as the lining membrane of the ventricle.

8. (XXXIII^e Liv., p. 4). A woman, 73 years old, was brought into the ward des Gateuses,† with loss of motion in the left side

* Here the brain proper was not diseased, and the intellect was perfect; the pons varolii had been partially destroyed by apoplexy or softening, and all control over emotional expression was lost. So far, well, but why was speech abolished? The variety of symptoms, with apparently the same anatomical lesions, and the variety of lesions with the same symptoms, are a constant stumbling block to the student of the diseases of the brain. The late Dr. Swett, in a MSS. note in his copy of Andral's *Clinique*, now in my possession, says he has heard Louis remark "that there was but one disease of the brain, about which you could speak, with certainty, before death, and that was "apoplexie foudroyante."

† The ward appropriated to those who, from their condition, spoil the beds and bedding on which they lie.

and marked rigidity of the left arm. She passed her stools and urine involuntarily, and the intellect was weakened. Her daughter said she had suffered three successive attacks in the first fifteen years previous; the left side was paralyzed but the recovery was complete; in the second, two years and a half previous, the paralysis was of the left side and persistent, but the patient could walk with a crutch, and retain her urine; her intellect was sound but her sight weakened. The third attack, two months before her entry, had again fallen on the left side; since that time her mind had failed and she passed her urine involuntarily. She died a month after entering the hospital. On examination, in the *right* hemisphere, great destruction of the inferior occipital convolutions, which are replaced by a chamois-colored membrane, strongly adherent to the pia mater, and by a loose, cellular tissue, infiltrated with serum. The cineritious matter of many of the convolutions is replaced by a yellowish pellicle. "The white substance forming the centre of the occipital lobe, presents a cellular cicatrix, infiltrated with opalescent serum, and there is a light, hortensia-colored softening of the white substance which had escaped the cicatrix." A small cavity was found in the optic thalamus, extending as far as the corpus striatum, and traversed by cellular filaments. In the left hemisphere, three of the occipital convolutions presented, instead of the cineritious matter, chamois-colored pellicles. In the centre of the optic thalamus, were two little cellular cavities, without color, without distinct cysts, containing a lactescent serum.

Beside the above cases, Cruveilhier gives the result of the post-mortem examination of Dupuytren, who up to the period of his death, preserved his intellectual powers unimpaired. The symptoms under which he suffered are not given, except that some time previously he had two successive attacks of vertigo, at distant intervals, and that, while lecturing, in the early part of 1834, he was seized with paralysis of one side of the face, and had the courage to support his face with his hand while he continued the lecture. The autopsy showed, first, a canary-colored cicatrix in the internal surface of the right lateral ventricle, behind the optic thalamus at the commencement of the posterior horn; second, a little "foyer" filled with a brownish cellular structure in the thickness of the gray matter of the right striated body, on a level with the optic thalamus; third, a little "foyer" filled a similar brownish tissue in the gray substance of the left striated body, on the same level with the preceding. A cured double apoplexy with cured softening.

Here then, are sixteen cases in which the condition of the intellect before the attack was observed, in which the nature of the disease was verified by post-mortem examination, being all that are contained in the *Clinique Medicale* of Andral and the *Anatomie Pathologique* of Cruveilhier, reported by men

whom every one will allow were competent, careful and conscientious observers, in which the hæmorrhage was situated in almost every part of the brain, presenting every degree of severity compatible with the continuance of life, many of them living for years after the occurrence of the apoplectic seizure, and yet, in only two of these was any decided impairment of the mind noticed. In one of these cases, that from Andral, in which, twenty-two years after a double apoplexy, the patient's mind had become dull, that dullness had come on according to Andral, not from the immediate effects of the cerebral hæmorrhage, but from the slow and gradual changes which supervened years afterward. In the second, from Cruveilhier, a woman seventy-three years old, after recovering, with an unimpaired mind from two previous attacks of hemiplegia, entered the hosptal six months after a third attack, with symptoms of softening of the brain and an enfeebled intellect. The post-mortem examination gives evidence of three distinct cured apoplectic extravasations, of extensive cured softening, and of recent softening, the cause of the recent symptoms. Perfectly in accordance with this has been the results of my own observations. At Bellevue, the great pauper hospital of the city, there are always a number of hemiplegiacs, but since my attention has been directed to the subject, I have seen no case in which hemiplegia has been the consequence of a well-marked apoplectic seizure, in which I have found the intellect seriously impaired. In some of these cases, the first impression of the observer is wholly unfavorable to the intelligence of the patients; the distorted countenance, the impaired speech, and the motiveless tears or laughter, give them an appearance of utter imbecility, yet a patient examination will commonly discover an amount of intelligence entirely unexpected.* In the following case, drawn up by the house physician of Bellevue Hospital, Dr. I. Bloxome, I am convinced that the patients who were in my wards, had a degree

* In many cases, a proper inquiry into the intellectual condition of the hemiplegia patient, of whom we have no previous knowledge, demands no trifling amount of time and attention. I well recollect one of the cleverest of our physicians, a gentleman widely known for his skill and attainments, made some clinical remarks on a patient at the time in one of my wards at Bellevue Hospital, instancing her as an example of the imbecility that follows apoplexy, and yet the patient's mind was, I believe, as sound as it had ever been! She had, within three years, suffered from two attacks of hemiplegia, which had left her perfectly deaf, and with an utterance quite unintelligible. She had commonly a dull, stupid look, but when her attention was attracted by touching her and signs were made, her expression entirely changed. She interpreted signs and gestures with uncommon quickness, could read, and followed written directions quickly and intelligently, but she was unable to write. Her husband, whom I questioned, was confident her intellect was not in the slightest degree impaired. She was subject to epileptic convulsions, in one of which she died. No examination of the body was obtained.

of understanding superior to that of the average of the inmates of the hospital.

Alida Rushton, a native of the United States, servant, æt. 55 years, was admitted August 6, 1856. Patient is hereditarily predisposed to apoplexy, her mother having died of it. Her health was generally good until June, 1854, when she had an attack of hemiplegia of the right side, from which she partially recovered. One year afterward, she was attacked with paralysis of both sides, for which she was treated at the New York Hospital and regained the use of her limbs so far that she was enabled to move about upon crutches. Toward the end of July, 1856, she had a third seizure, also affecting both sides, since which she has been unable to walk, stand, or turn herself in bed.

About a year before the attack of hemiplegia, according to the patient's account, she had begun to lose the control of the sphincters; this had gradually and steadily progressed, until now the fæces and urine pass involuntarily. Her mind is sometimes confused; she says that she talks more slowly than before the attack of the hemiplegia; her memory does not seem much impaired; she is very sensitive, and sometimes laughs or weeps indifferently at any question which may be asked.

From the facts given above, no other conclusion can be drawn than that any impairment of mind, as a direct consequence of apoplexy, after the patient has recovered from its primary effects, must be an exceptional occurrence. That the apoplectic seizure may hasten the approach of senile atrophy of the brain, is, as before stated, probable; when atrophy has already commenced, an apoplectic attack may undoubtedly quicken its progress, and, in such a case, the friends of the patient would naturally attribute the rapid decay of the mind wholly to the apoplectic seizure. This, I think, I have myself seen, and as apoplexy becomes more common as life advances, such cases may not be unfrequent.

The confusion of mind, the difficulty in pursuing a train of thought, of which apoplectics are apt to complain, is, to a great extent, the mere result of diminished nervous energy. They comprehend well and judge correctly, but before their general health is confirmed, they can no more think continuously, than they can take a long walk, or perform any other act demanding a considerable expenditure of nervous force. It is not the brain specially that is affected, it is the system at large. Of all the faculties, memory, either special or general, is most apt to be impaired, and this impairment patients are always ready to admit and complain of.* As the patient recovers the memory

* The diminished nervous energy has often something to do with the impairment of memory as well as with the loss of power of continuous thought. A marked illustration of this is given by Sir Henry Holland. (Chapters on *Ment.*

commonly improves; and, if no new attack supervene, this improvement is progressive for years. A medical man, about thirty-five years of age, had a hemiplegiac attack on the morning of October 20, 1850. There was complete loss of motion on the right side; consciousness was retained, but articulation was so much interfered with that his speech was unintelligible. For two months the paralysis continued perfect, the patient being unable even to move a finger or toe of the affected side; after this period, he gradually and rapidly improved. He now, August 1, 1857, has a halt in his gait, and his right hand is quite lame; still he is able to write a short letter with the right hand, but the effort soon tires him and becomes painful. At first, the memory of previous occurrences was very much affected, but it has continued to improve up to the present period, and is now nearly as good as ever; at no period of the disease was his understanding in the least impaired, and for the last six years he has been engaged in the active practice of his profession.

Before the physiology of the nervous system was understood as well as it is at present, it was pardonable to ascribe the emotional paroxysms, under which hemiplegiacs are apt to suffer, to mental weakness,* but it is strange that this error should still be persisted in; the bursts of tears or of laughter into which hemiplegiacs are often thrown on the slightest occasion, are not, necessarily, more connected with an enfeebled understanding than the want of power over the muscles of the affected extremities. Both facts have a common cause, and the will can no more control the one than it can move the other.

Whence, then, arises the number of imbeciles who are to be found in every large alms-house? Partly, doubtless, from the cases already mentioned in which senile atrophy is prematurely caused, or its progress hastened by the occurrence of apoplexy; and, let us recollect, the state of isolation and neglect from which such persons frequently, often necessarily, suffer, is in itself a main cause of a weakened intellect; the mind rusts out for want of exercise.† But in the majority of instances the

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Physiol. p. 160.) "I descended on the same day two very deep mines in the Hartz mountains, remaining some hours underground in each. While in the second mine, and exhausted both from fatigue and inanition, I felt the utter impossibility of talking longer with the German inspector who accompanied me. Every German word and phrase deserted my recollection; and it was not until I had taken food and wine, and been some time at rest, that I regained them again."

* Any uncommon indulgence of emotion, whatever may be its cause, is commonly spoken of as exhibiting mental weakness, or childishness.

† The fact that men who, after having been immersed the greater part of their lives in business occupations, retire from active life with no pursuit to fill the void thus created, are apt to fail in mind earlier than those who continue their pursuits

cause is to be found in the occurrence of *repeated* attacks of softening and hæmorrhage in brains whose nutrition is otherwise impaired and vitiated. "Imbecility" says Cruveilhier, XXXIII^e^ Liv., p. 5, "is often the result of multiple softenings and, consequently, cicatrices. A certain number of imbeciles of the insane wards and of the *gateuses* show, as the material cause of their mental condition, one or many cicatrices of softening. It is, perhaps, not impossible to distinguish these cases from imbecility, without a corresponding organic lesion. Traces of paralysis in the cases of imbecility with organic lesion, would, in general, put the observer on the track."

Connected, though perhaps indirectly, with the subject of the present paper, are certain rare cases, in which, while the hearing remains unaffected, the patient's consciousness is entire, and there is no delirium, the faculty of speech is either lost or perverted. In the cases of this kind, in which, after death, the body has been examined, the lesions found have been very various, and are confined to no particular portion of the brain; thus, in two instances narrated by Andral, (*Clinique Med.* vol. 1, p. 454–62,) there was softening of the corpus striatum. In the cases already quoted from Cruveilhier, there were evidences of old lesion either from softening or from hæmorrhage. In one recorded by Abercrombie, there was extensive suppuration of the left hemisphere of the brain.—(*Ed. Med. & Surg. Jour., July*, 1818.)

In some of these cases, there is evidently paralysis of the tongue and other organs concerned in articulation; thus, in the *Med. Chir. Rev.*, vol. x., p. 413, a case is given in which a gentleman was repeatedly attacked by temporary paralysis of the tongue, attended by speechlessness; the attacks seemed to be connected with the stomach, and were relieved by free vomiting. In a few instances, the memory of words appears lost or their proper value is no longer attached to them;* but, in the

to the last, is well known. The same want of mental occupation is the great cause of imbecility, produced by long continued solitary confinement. Must it not act with double force upon the neglected paralytic, who has not even the poor resource of locomotion to divert him?

* The following case appears to me to be one in which the memory of words was in a great measure lost. John White, æt. about 40, born in Ireland, entered Bellevue Hospital, May 13, 1857. According to the account of his wife, about eighteen months previous, he had had a fit of sickness, which confined him for a fortnight to his bed, and during which, the catheter had to be employed to empty his bladder. From that time his speech had been in a great degree lost, his memory impaired, and he had been unable to do anything for his own support. He had forgotten his own name and that of his wife, when asked a question his common answer was, "I don't know," pronounced distinctly enough, but somewhat thickly, and with a puzzled, bewildered expression of countenance. If his wife were present at the time, he would add—"ask her." When questioned about the number and age of his children, and the questions urged in despite of his "I

great majority of cases, the motions of the tongue and of the organs concerned in articulation are free and unembarrassed; the patient understands what is said to him, attaching to words the proper meaning, is commonly able to read, sometimes to write, yet, is either wholly unable to articulate, or his vocabulary is confined to some few words, which he pronounces on every occasion. It would seem that, though he can execute all the usual motions of the muscles concerned in articulation, he had lost the power of so co-ordinating them as to produce articulate speech. There are still other cases which can scarcely be put in either of these classes. The patient evidently understands what is said to him, spoken words excite in his mind the corresponding ideas, but he is not only unable to speak, he can not write. If he attempts it, he joins letters together in such a way as to convey no meaning, and is often conscious himself, on seeing what he has written, of his failure; in some instances, probably while he comprehends words when spoken, he can not recall them. But there are still cases left which seem to defy our analysis. In the strange union between mind and its material organ, the brain, physical lesions sometimes produce phenomena that put at fault all our psychological theories.

Partly from my own practice, but mainly from the contributions of my friends, I have collected a number of these singular cases. They seem to me, not only interesting in themselves, but important in their medico-legal bearings, and I, therefore, subjoin them, with but few words of comment.

Sometimes, this condition is temporary, and disappears after

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don't know," he would give various answers at different times; though, on one occasion, on being asked which of his children was dead, he rose on his toes. and, lifting one hand as high as possible, said ''s dead,' which his wife stated was correct, as they had lost the elder and taller of their children. He could repeat his own name when it was given him; when asked to write John White, he several times wrote Ihon or John, but could never get farther; when the whole name was written out for him, he copied it in the handwriting of a boy who has just begun to join letters. He could count up to seven or eight, but would invariably go wrong if he went farther; on pieces of paper being handed to him, he would count, add, or subtract to that extent. On one occasion, when examined in this way, he made signs as if he were putting down and adding up columns of figures, which the orderly of the ward interpreted as meaning that he had once been a book-keeper in a store; on being asked if this was the case, he answered "yes," but his wife informed us it was not so, and that he only meant to say that he was at one time a good accountant, which was the fact. In fine, all investigation showed that beyond a few simple phrases, he attached no proper meaning to words. Most thought him imbecile, but his *conduct* throughout was that of a man in full possession of his mind. He recognized his friends and acquaintances, he made the proper distinctions between the patients, the orderly, and the physicians; his dress and person were always neat and clean; he behaved properly at table, he was helpful in the ward; in short he conducted himself very much as a Russian or Chinese might, who had suddenly come into the ward without understanding the language of any of the inmates.

a few hours, as in the following case, communicated by my friend, Dr. A Clark :—

Case 1.—*Phthisis—Temporary Loss of Speech and Ability to Write—Intellect Clear.*—Dr. S., of Lexington, Mo., about 33 years of age, has phthisis. During the last winter, while confined to his room by an increase of his disease, he, one evening, lost the power of speech, and the ability to write connected words, while his intellect remained perfectly clear. This continued for about an hour, after which he could talk with his usual facility, but made no attempt to write that evening. Sometimes, during the night, he talked strangely, and when the next morning his sayings were repeated to him, he did not remember many of them, and some he was sure were not the expressions of his right reason, yet, during the first hour in which he was speechless, his mind was perfectly clear, and his recollection of what happened, and of all that happened, was as distinct as at any period of his life.

He was ill in bed, talking with a friend who had called ; he felt weaker than usual, and thought he might faint ; after a minute or two of these new sensations, he attempted to speak, but found that he could not. Some one was knocking at the door, had knocked repeatedly, and the family did not answer. He wished to ask his friend to go to the door. But though his thoughts were never clearer, and he could utter sounds, he was utterly incapable of articulating a word. Convinced of this incapacity by repeated trials, he took a paper and pencil lying near him, and attempted to write his wish. He wrote the first word, but the second was anything but what he wanted, and he saw that it made nonsense. Trying a second time, he was conscious of writing again the first word correctly, but the second was made up of parts of several words, and signified nothing. Seeing that he could not command words, and must fail to communicate his wish in this way, he drew his pencil through what he had written, laid down his paper and pencil, and striking one hand on the other, to imitate the knocking, pointed to the door. His friend understood him and opened it. During the hour he made no other attempt to write, and after that time his speech returned.*

In the majority of cases in which the loss of speech is permanent, the patients are at the same time hemiplegiac. In these cases, where the general health does not improve, no improvement is apt to take place in the patient's ability of communicating with his fellows.

Case 2.—*Coma—Hemiplegia—Epilepsy—Loss of Speech.*—Oliver Wilcox, hatter, æt. 60 years, born in New York, was admitted to

* An instance of the sudden loss of the power of uttering words without any recognizable disease of the brain, and the sudden recovery of speech, occurring twice in the same person, is reported in the Lond. *Med. Gaz.*, new series, vol. iii., p. 452. Two more cases will be found in a paper by Dr. Osborne, in the Dublin *Jour. of Med. and Chem. Science*, for Nov., 1833.

Bellevue Hospital on Nov. 12, 1856. The patient has been intemperate in his habits, but his health was habitually good, until about two years and a half ago, when he was suddenly seized with paralysis of the right side, and remained insensible two or three days. On recovering his consciousness, it was found that there was complete paralysis of motion of the right side, and that he was entirely deprived of speech. In June last, he lost, to a certain extent, the power of motion in the left side, but from this he rapidly recovered. The sensibility of the right side is unimpaired, the patient is bedridden and helpless, the paralysis of motion continuing complete; the muscles of the upper extremity are somewhat contracted, so that the forearm is partially flexed upon the arm. There is some paralysis of the bladder, the urine in great part dribbling from him. The tongue is protruded in the median line. The pulse and respiration are normal, the appetite good, and the bowels are regular. The patient had been sometime subject to epileptic convulsions, and they continued at intervals of two or three weeks, while he remained in the hospital. With regard to his intellect, his countenance is bright and expressive, except, just after recovering from one of his epipleptic seizures, when, for a few hours, its dull and vacant expression forms a strong contrast with his ordinarily intelligent look, and at the same time, his intellect is then evidently obtuse. He hears and comprehends what is said to him; recognizes his physicians and friends; attracts attention to his wants by knocking on the wall; recollects the days when his children are permitted to visit him, and seems irritable and annoyed when they fail to come. On being asked about his disease, he points to his paralyzed side; on one occasion, a patient near him, seeming about to fall, and no assistance being at hand, Wilcox, was seen to reach toward him, at the same time, uttering his peculiar inarticulate cry. At another time, the case to which allusion was made, in the commencement of this paper, was spoken of, and I observed that I thought Wilcox fully competent to make a will; on looking toward him, his quick look and pleased smile seemed to show that he himself felt confident of his ability, and was pleased to see it recognized by another. On one occasion, after much urging, he finally wrote his name with his left hand, in large, irregular, badly-formed letters, but the effort was evidently great and painful, and he could not be induced to repeat it. It is exceedingly difficult, however, for a *stranger* to form any just opinion of the amount of intelligence of a man in Wilcox's condition; I believe those who have observed him most carefully, and closely, have formed a very favorable judgment, while a casual examination would lead to a different conclusion.

When the patient recovers, so as to move about and assist himself, the evidence of intelligence is much more satisfactory.

Case 3.—*Apoplectic Seizure—Coma—Hemiplegia—Loss of Speech.*—A man was brought into Dr. Clark's wards, in a state of perfect coma; on recovering his consciousness, there was paralysis of the

right side. This rapidly improved ; in a month, he was enabled to sit up in bed ; in two months, with some help, to walk about the ward, dragging the affected leg ; in four or five months, he could walk tolerably well, having, however, very imperfect use of the hand and arm. He was speechless, having but a single word "Same," which he used indifferently on all occasions, varying its loudness and intonation. The countenance was intelligent, he heard and understood all that was said to him, would do as directed, assisted in taking care of the patients, and administering their medicine ; yet, to all questions he had but one answer—"Same, Same." One day, commenting upon the case, Dr. C., cautioned the students, lest they might confound the want of speech with the absence of intellect. As a test how thoroughly the man comprehended what was spoken, a number of different instruments with which he was believed to be unacquainted, had been placed in another apartment, one of them was described and the patient was directed to select it from the others. He listened attentively to the description, went for and obtained the required instrument, and presented it with his usual "Same, Same." At length, the man suffered from another attack, renewing the paralysis in the right side, a comatose condition came on, attended at first with convulsive jerkings of the paralyzed limb, and terminating in permanent flexion of them ; the coma grew gradually deeper, and the man died. On post-mortem examination, an apoplectic cyst was found in the left corpus striatum, surrounded by extensive softening.

For the following case, I am indebted to my friend, Dr. Alfred C. Post :—

Case 4.—*Convulsions—Coma—Right Hemiplegia—Epilepsy—Loss of Speech—Intellect Clear.*—Mrs. E. P. was attacked with hemiplegia in the summer of 1832, within a few days after parturition. She was then about 40 years old. The attack was ushered in by convulsions, with profound coma, which gradually subsided, leaving the right side of her body, including the upper and lower extremities, completely paralyzed ; from that time, she was subject to occasional attacks of epileptiform convulsions, at variable intervals ; these convulsive attacks gradually diminished in frequency and in severity ; by degrees, she acquired some power of moving the right lower extremity, but the paralysis of the upper extremity has remained almost complete to the present time ; she walks with the aid of a crutch under her left axilla, and held in her left hand ; her general health is good, and has been so during the greater part of the time since the attack ; her power of articulation was at first entirely destroyed, but it was not long before she regained the power of speech, although her vocabulary was confined to five words, "Dear me ! I don't know." These words she enunciates very distinctly, with a variety of tones and gestures, and changes in the expression of her features, indicating affirmation, negation, interrogation, and various emotions. She evidently understands what is said to her, and takes a decided interest in ordinary topics of

conversation. When friends come into her presence, she recognizes them as any other person would do, transfers her crutch to her right axilla, and, with her left hand, shakes the hand of her friend. She asks questions, by the use of the words already mentioned, with a tone of interrogation, and appropriate gestures. She rarely fails to make herself understood ; if she is not comprehended at first, she shakes her head ; when a correct answer is given, she says " Ah !" with an affirmative nod, and often a smile. For the first few years after her attack, her husband and children kept her, in a great measure, confined to the house, not even allowing her to attend church, on account of her lameness, and her liability to convulsions. Her confinement was very irksome to her, and she was especially annoyed by her exclusion from attendance at church. After a time, she was allowed to take frequent drives in a carriage, and occasionally to spend an evening at the house of a friend ; she was also allowed to attend church, and this privilege seemed to afford her much gratification ; she had not previously been a communicant, but, a number of years after her attack, she was admitted to the communion in the Presbyterian church, under the pastoral care of Rev. Dr. Spring, the pastor being satisfied, from the conversation which he had with her, that she had correct and Scriptural views of evangelical religion. She appears, for the most part, cheerful in her disposition, and is fond of society, taking an interest in all the ordinary events which are transpiring around her. With regard to her wearing apparel, she manifests the interest which is usual with females. She has never learned to write since she was deprived of the use of her right hand, neither does she communicate her ideas by referring to written or printed matter before her. She has occasionally repeated a word, after it has been pronounced several times distinctly by one of her friends, but the word thus repeated does not afterward form a part of her vocabulary ; her inability to converse seems to depend on the loss of memory of words, and yet, words spoken by others evidently convey to her mind distinct ideas of the things which they represent. I do not perceive in her any evidence of mental imbecility, and, although the process of communicating with her is sometimes slow, I have the same conviction that we mutually understand each other, that I would have if she were able to converse in the ordinary way.

The following exceedingly interesting case was communicated in a letter from Dr. C. C. Van Wyck, of Philadelphia, to Dr. Wm. H. Van Buren, of this city :—

Case 5.—*Apoplexy—Coma—Right Hemiplegia—Epilepsy—Loss of Speech—Intellect clear.*—My brother Edward, now æt. 42 years, assistant-surgeon in the U. S. Navy, was ordered, in the summer of 1838, to join the *Ohio*, ship of the line, Comm. Hull ; was on duty till December of that year, when, the first morning out from New York, bound to the Mediterranean, he was seized with

apoplexy. Dr. B. Ticknor was surgeon of the fleet, and his physician, Dr. Bates, had charge of him at Port Mahon, and, subsequently, Dr. Folty, both of the navy. In September or October, 1839, I reached Mahon, and, after some delay, brought him to Gibraltar, and thence to New York, arriving at the latter place in December, 1839. My brother's attack was very severe; he was unconscious and comatose for several days; it probably was three weeks before he could answer "yes" and "no" (the first words, I think, he uttered), and, before he could comprehend any question to which he would thus answer, he would give utterance to a *grunt*, I might call it, or, if I had to express it in a word, I would write it "ugh." I was the first of his relatives who saw him, after his attack, in September or October, 1839. I should have been utterly unable to comprehend his then language of words, looks, and signs, but for the assistance of his physicians, one of whom had been with him ever since his attack, and that of the quondam ship's hospital steward, who was then his nurse. With the assistance of these persons, and my constant attendance upon him, day and night (we being thrown so much together in a foreign hotel, and on shipboard), aided, also, by a most intimate knowledge of his affairs—a knowledge made necessary by his expected absence on a cruise of, at least, three years—I soon learned to understand him in the general expression of his wants, and can now do so much more readily than any other relative or friend; hundreds of times I have had to act as interpreter of his wants; by degrees, however, other members of the family learned to understand him. From six months after his apoplectic seizure, until, say eleven years ago, or, during a period of seven or eight years, Edward was subject to epileptic attacks, at first, every few days, then, after an interval of ten days, two weeks, and so on, gradually decreasing, until they subsided entirely. These attacks caused me much anxiety and alarm; I feared either another apoplectic seizure, or idiocy; he has, however, overcome them.

In the early years of his infirmities, crying fits would often occur, especially when meeting an old friend, and no one near him to interpret, or, when he would see the promotion of a classmate, or, on recovering from an epileptic attack, the tears would flow in torrents, and, if no one but myself was present, he would exclaim, "Die, Die!" On the other hand, a jest, an anecdote, or frolic of any kind, would excite such convulsive laughter, that I have, again and again, feared for his life, from the evident determination to his head. He was always excessively fond of fun and frolic, and is so still. To a stranger, however, these evidences of enjoyment, in the flushed face (perhaps distorted), the salivation, and the moaning, or indistinct convulsive articulation, are rather painful to behold.

While engaged in any matter of interest, his breathing becomes almost stertorous, his salivation is profuse, and, to the unprofessional eye, he would seem to froth, and look like one idiotic.

Several years after his attack, Edward learned to communicate his ideas, as well by detached words as by reference to the dictionary, and to any newspaper, or, I may say, the word in a book or newspaper that would form the key to it. This is particularly true in reference to his physical sensations. Again, when understanding his thought, I have purposely put him off, for days and weeks, hoping that amusement or company would cause him to forget it, but he has persisted, until he has placed his meaning so fully before me, that I had no longer any pretext for putting him off; then I would reason with him, and he would seem to be satisfied; this has occurred, time and again, in regard to a variety of matters.

His paralysis is on the right side, and I have always urged upon him the necessity of learning, as an untaught child would do, both reading and writing; he would acquiesce, always, and would try. He can now (June 14, 1857,) glean, as rapidly as almost any one, the news from the papers, can sign his name very legibly, and has, dozens of times, written short, disconnected letters, all with his left hand, which, of course, would be unintelligible to almost every one but his intimates. He has, in many instances, communicated his ideas to strangers, so far as to enable them to write to me on matters of business, which they could not have understood, except from himself.

His family consider him, this day, *more competent* to transact pecuniary business, with *care and correctness*, than he was prior to his attack, *i. e.*, before, he was careless and unmindful of small sums of money; now, in computing interest, calculating his income, his board bills, traveling expenses, and in purchasing any articles of dress or the like, in discrimination in the matter of presents, according to the necessities of the individuals; in all little matters of every-day business he exercises the closest care and scrutiny. I may say, indeed, that he thinks, reasons, argues, and performs all the offices of an intelligent, intellectual, responsible individual, save only that he has a language of his own, made up of words, signs, expressions, and gestures. He manages all his own affairs, only sometimes employing a hand to execute. Indeed, he has certainly managed all his business since 1841, and, I believe, could have attended to it sooner, but he was living with relatives who anticipated his wishes. I can not state at what period after his attack his mind recovered fully.

I know of no test of mental capacity under such circumstances, but the daily, hourly, watching of the eye of affection, the eye, almost, that never slumbers. Science can hardly look long enough, in this hurrying world of ours, to discern the small details which form the links, and make up the chain of evidence that will establish the entire accountability and responsibility of such an individual.

Early in 1840, he commenced learning to write with his left hand, *at first single words*, strangely spelt, and written often

according to their pronunciation, rather than their spelling. At this period, he was often observed practicing the pronunciation of a word, then, as it seemed to be right, he would try and write it. At other times, seeming conscious of his having pronounced it wrong, he would exclaim "no!" "psha!"—then if assisted to the right word, "yes!" would eagerly follow. After a while, by constant practice, he learned to sign his name, and now his chirography is quite legible.

It is not, perhaps, inappropriate to add that the medical profession in Philadelphia, furnishes three memorable examples of what hemiplegiac persons, retaining their speech, can do. These all attend, not only to their ordinary business, but to their patients, and two of them have been lecturing for years.

The following case, for which I am indebted to Dr. A. Clark, is familiar to all who have frequented Bellevue Hospital for the last two months, and no one has examined the patient attentively without being entirely convinced of the integrity of her intellectual faculties.

Case 6.—*Apoplexy—Hemiplegia—Loss of Speech—Intellect Perfect.*—Eliza Jane Pendergast, æt. 26 years, married, was admitted into Bellevue Hospital in November, I think, of 1855, under my charge, deeply apoplectic and apparently near her end. In about a month she recovered so far as to sit up a little when placed in a chair, but she had complete paralysis of the right side, and no power to articulate a word. By this time, she had recovered her intelligence so as to indicate her wishes and to understand what was said to her. Whether she had convulsions at any time I can not distinctly remember. This woman was discharged after a time, and re-admitted June 6, 1857, in the following condition:—Her intellect is perfectly clear; she remembers my former care of her, and told me by signs when she saw me first; her memory is clear regarding all the events of her sickness, now of about twenty months duration. She has concerted signs, so that, by her fingers and otherwise, she makes those about her understand her meaning When I did not comprehend her, she would call on the nurse or house physician to interpret for her. Her countenance is very expressive, though still the muscles of the right side have not the free action of those of the left. She can use her right leg a little, but her right arm is still almost completely paralyzed. *She can utter no articulate sound.* The word *no* is the only one she can make intelligible, and this only by accompanying the sound with a negative sign.

She can read, and says that she could write before her attack. I asked her to write her name (with her left hand, of course, as the right is useless). She took the pencil, and, with an expression of face which showed great effort, she made a large, irregular *E*. She attempted the next letter, but did not succeed in making it, and handed me the pencil, with an expression of countenance and

manner which said *it was impossible.* Urged to try again, she again made the *E*, but more awkwardly than before, then stopped and appeared to think. Supposing she might not recollect the letter, I named the letter *l*. It was evidently what she was striving to recall. With a quick motion, and an expression of relief, she laid the pencil to the paper, and, with a slow and unsteady movement, made something which was intended for an *l* —after the *E*. Without assistance she could go no further. Her written name was then shown her, and she being urged, made *E l i*, but broke down on the *z*, although the copy was before her. She was not willing to make any further attempt. It seemed as if the effort had exhausted her power even to copy letters.

This woman is now (July 6) under the charge of Dr. Metcalfe, and Dr. M'Cready has been Dr. M.'s substitute for the last few days. Neither of these gentlemen were present at this trial of writing, but Drs. Cobb, Draper, and Johnson were.

It is difficult to conceive of an instance in which the mind, deprived of its most ready agents of expression, the tongue, the pen, and the right arm, could be more clearly manifested through new and unusual channels, than it is in this case. The patient is of vivacious temperament, cheerful and hopeful, and devises a hundred gestures and attitudes to express her thoughts, so as to leave no doubt on the mind of any one who sees her, that her intellect is entirely free from any embarrassment. Her perception is quick, her memory of things entirely unclouded, and her judgment perfectly sound. Yet, with all this, it is noticeable that this woman after a long conversation will sometimes give wrong answers, which, however, she at once corrects on repeating the questions. This seems to result from fatigue of the attention, which it is evident is intensely active in devising substitutes for speech while she converses.

This patient bears the marks of an extensive and severe rupia, which is regarded as specific—and some of her physicians have thought that the paralysis might have had its origin in a syphilitic taint. But as there were no marks of that disease in her system twenty months ago, while in the hospital, there can hardly be a doubt that, if this eruption was specific, it depended on contamination of a later date than the apoplexy.

August 8.—The writing experiment was repeated to-day, with results differing but little from those recorded above. After repeatedly abandoning the attempt, and being repeatedly urged to write her name, she succeeded in about five minutes in writing *Eliza*, but she could not go any further. She would stop after every letter, handing back the pencil in a despairing manner, but still urged, would renew the effort. The *z*, it was evident, seemed to her impossible, but by dint of urging and encouragement, it was finally achieved, without any other assistance than the frequent repetition of the name to be written. It is in a stiff, cramped, and irregular, but legible hand.

For the following case I am indebted to Dr. Alexander R. Whiting:—

Case 7.—*Apoplexy—Hemiplegia—Loss of Speech—Intellect unaffected.*—Mr. P.; æt. 48 years; rather under size; a steady, hard drinker; occasionally subject to rheumatic attacks; had always an exceedingly violent temper. One day, after a fit of passion, he was found with paralysis of the left side so complete, as to destroy all motion. The power of speech was entirely lost; he could only utter two unmeaning syllables, "Begum, Begum," and these he constantly reiterated when spoken to. It is astonishing what variety of meaning he gave them, rendering clearly, through their aid, by change of intonation and of the force of utterance, together with the expression of his countenance, and the gestures of his right arm, recognition, inquiry, pain, anger, assent, and dissent. Perception and understanding seemed unimpaired, but the deprivation of speech remained perfect. He gave vent to feelings of anger by violent sharp repetitions of the word "begum," with passionate movements of the right arm and hand, and with all the facial expression of rage. The paroxysms of rage seemed to increase in frequency, "the ruling passion strong in death." He did not at any time give way to tears, as is common with paralytics, but preserved the same dogged pluck with which he had once exchanged six shots in a duel. His anger was particularly excited against his wife, and against a physician, who approached his bedside, with whom he had previously had a quarrel. He laughed violently at jests, and seemed indifferent at the announcement of the probably fatal issue of his disease. We endeavored to get him to communicate with us by pencil and slate, but he could not trace the letters, and, after trying, would drop the pencil with a look of sullen disappointment. He died in about three months after the attack, without any change in his symptoms.

The following case, which occurred in the practice of Dr. Paul B. Goddard, was communicated to me by Dr. C. C. Van Wyck, of Philadelphia:*

Case 8.—*Apoplexy — Hemiplegia — Loss of Speech—Intellect unimpaired.*—Mr. L., æt. 65 years, of Philadelphia, a prominent and widely-known merchant, after active exertion, without any premonition, and, to all appearances, while in the enjoyment of perfect health, was attacked by apoplexy in the night of July 21, 1857. Hemiplegia of the right side ensued immediately, with entire absence of both sensation and motion; for a few hours afterward the patient was heavy and sleepy. Active treatment was immediately instituted, and, before the close of the following day, his condition was found to be—complete hemiplegia of both

* Dr. Van Wyck's attention having been directed so strongly to this subject by the case of his brother, above given, we may hope for some further communication from his pen in relation to it.

sensation and motion, slight distortion of the face, impossibility of articulation, hearing fair, comprehension good, and assent or dissent given solely by signs.

Up to the present time (August 5), active treatment has been pursued. Daily experience and frequent observation by his physician, as well as by his family and his business associates, have constantly proved that his intellect is unimpaired. He can not only comprehend questions of ordinary import, but those also involving business matters, and requiring the connection and association of ideas—in short, he can reason correctly and well; he has repeatedly signified, by gestures of assent or dissent, that he is not conscious of any difference in reasoning power.

Within a few days he has commenced an indistinct articulation of monosyllables, as yes, how, when; these are, however, rather variations of the common exclamation of inquiry, as eh? hah? At times he can not protrude his tongue; then, after effort and a little rest, he will protrude it without difficulty. The distortion of his face has disappeared. His appetite, digestion, and all the powers of assimilation are absolutely normal.

The most trying points of the case—of course, I mean painful and trying to his relations and friends—are those connected with the consciousness of his paralyzed condition, his inability to communicate his wants, his thence excited, long-continued convulsive bursts of tears and sobs, as he points to his paralyzed right arm. At other times he seems hopeful and even cheerful, and his friends look for his ultimate restoration to usefulness.

For the particulars of the two following cases I am indebted to my friend, Dr. Willard Parker:—

Case 9.—*Apoplexy—Hemiplegia—Loss of Speech—Intellect unimpaired.*—Early in March, 1857, Mr. G., of Brooklyn, a gentleman of wealth and leisure, and addicted to literary pursuits, was suddenly seized with complete hemiplegia, while absent from home. Not being recognized by those about him, he was taken to Bellevue Hospital; there it was ascertained that he was conscious, but completely deprived of speech. His whereabouts being discovered by his friends, he was removed to his own residence. The paralysis of the leg gradually disappeared, but his arm is still, at this date, almost useless. From the period of his attack he has never been able to utter a syllable. His intellect seems entirely unaffected. He perseveres in all his former tasks, and passes his time, as previously, largely in reading and writing.

Case 10.—*Paralysis—Loss of Speech—Mind unimpaired.*—I was sent for on May 25, 1856, to see Mr. V., a wealthy and extensive merchant. I was informed that his constitution was good, and that his health, with the exception of occasional attacks of hæmorrhoids, was in general perfect. There was no hereditary predisposition to disease; his habits were temperate, except that he was a large eater, and indulged in heavy suppers. He had, for some time back, been engaged in extensive and heavy financial

operations, and these weighed upon his mind, and would often hinder sleep. During the last year he had several times been attacked by a sudden sense of suffocation, and had been compelled to stop for a few moments and support himself, gasping for breath.

On his visit, he found him sitting up, with a flushed face, and anxious countenance. His mind seemed bewildered, and he was desirous to leave the house. He seemed to hear and comprehend what was said, but could not speak nor make himself understood, and this naturally excited him. He dragged his right foot in walking, but there was no other evidence of paralysis ; the movements of the tongue and facial muscles were free and unconstrained. He was sleepless ; the pulse was about 90 ; the tongue coated ; the bowels confined ; the head somewhat warmer than natural. A purgative was administered, and cold applications were directed to the head.

On the following day the patient was quieter ; the febrile excitement was gone ; he had had a good and refreshing sleep ; the tongue was clean ; the appetite good ; the urine natural ; the dragging of the right foot was less marked. As to his speech, he could articulate certain words, but they had little reference to the ideas he wished to express ; he seemed to be aware of this, but could not recall the right word. He knew his family and friends, but could call neither his wife nor children by name ; his language was confined to monosyllables ; he substituted time for distance, as years for miles ; the pronouns he, she, it, he used indiscriminately ; a segar he sometimes asks for as a man, at other by some other word. At our desire he attempted to write, but was unable ; after repeated efforts he managed to write his own baptismal name, James, but could get no further. He recovered so as to walk and ride out. His conduct, on all occasions, was proper, his understanding seemed unimpaired, and those about him learned to interpret his wishes, but speech remained to a great extent lost.

Case 11.—*Apoplexy—Hemiplegia—Loss of Speech—Mind clear.*—My friend, Dr. Benj. Ogden, informs me that, about four years ago, the Rev. Mr. F., at that time principal of a large academy in the neighborhood of the city, was suddenly attacked by complete hemiplegia, and, at the same time, lost entirely the power of articulating words. He recognized his family and friends, and he evidently understood what was said to him, but could only communicate his wishes by signs and gestures. These, after a time, his family acquired great facility in interpreting. His sight was so impaired that he was unable to read ; but he liked being read to, and listened with attention and evident pleasure. He joined, as usual, in family worship ; he was amused at what was calculated to cause a smile, and was affected to tears by what was sad and distressing. He had always prided himself on keeping a good table for his school-boys, and he showed the same feeling after his attack ; and if the boys, as they sometimes did,

made any complaint to him on the subject of their diet, he would at once endeavor to set the matter right. His family and his intimate friends were convinced that his understanding was perfectly good; the only difference they observed in him since his affliction was, that his temper was more irritable, and that amusement was apt to be expressed by uncontrollable laughter, and distress by equally uncontrollable bursts of tears. He died about two years and a half after the attack.

Case 12.—*Hemiplegia—Loss of Speech—Recovery.*—During the last summer, I was called to a well-built, athletic Irishman, who complained of headache, with some gastric disturbance. The man was employed in one of the bonded warehouses, and, as I understood, he had frequent occasion to draw off liquors, and there was some tremulousness of the tongue, I thought that his disorder might have been caused by the too free use of alcoholic stimulants. The next morning I found him in bed, with a pleasant smile on his countenance, but replying to every question I addressed to him something about "circumstances, circumstances." This word, with one or two monosyllables was all that could be got out of him; yet he seemed to understand what was said to him. On asking him to rise, it was discovered that there was incomplete hemiplegia of the right side. The case passed from under my care, but I understood that, after a number of days, he recovered the use of speech, and that a gradual improvement of the paralysis took place. I saw him again, about a year from the attack. There was still a halt in his gait, and his right arm had not recovered its usefulness. He told me that when he answered my questions so foolishly on the morning of his attack, his mind was perfectly clear, and he heard and comprehended all that was said by the persons around him. In proof of this he mentioned some observations which I had myself made in regard to his complaint, showing that he had both understood and remembered what had passed.

Here, it will be seen, are eleven well-marked cases of hemiplegia, three of them complicated with epileptic convulsions, and all of them with loss or perversion of the faculty of speech. Of these patients seven are still living. Besides the cases here recorded, three more have come to my knowledge, the subjects of which, I believe, are still living. This shows conclusively the loss of speech, as an accompaniment of hemiplegia, to be no *very* rare occurrence. Of the whole fourteen cases, two have perfectly recovered the use of speech; two have recovered it to a partial and limited extent; the others still, I believe, remain speechless. From the cases recorded in the journals to which I have access, I believe that recovery from perversion of the faculty of speech is more common and perfect than when the power of articulation is either wholly lost or confined to a few monosyllables. Direct medication, except in so far as it

improves the general health of the patient, seems to have no effect upon the lost faculty; more is to be hoped for from careful, long-continued, and well-directed exercise of the local organs by the patient himself.

In *all* the cases that have come to my knowledge, as well those recorded by others, as those that are here given, where hemiplegia, with loss or perversion of the faculty of speech, has been unattended by coma or delirium, there is no evidence whatever that the intellect had been materially weakened; on the contrary, in all the cases recorded by Cruveilhier, Andral, Osborne, Bright, as well as those here given by Drs. Van Wyck, Post, Parker, Clark, Whiting, and myself, there is ample proof that the patients possessed a large and competent share of understanding. The most doubtful of all the cases is that of Wilcox, arising from the helpless condition and feebleness of the patient as well as from the absence of previous knowledge of his history, and from the difficulty of communicating with him; here the proof of intellect is positive, while that of weakness of understanding is entirely negative. So uniform is the testimony in these cases, that it would seem as if the absence of speech in similar instances must be looked upon as *prima facie* evidence of clearness of understanding! *

In the first part of this paper, it will have been noticed that in several of the cases, abstracts of which were given, speechlessness supervened before death from apoplexy, unaccompanied

* Those who wish to pursue this subject will find, beside the cases from the *Anatomie Pathologique*, abstracts from which have already been given, two more in the same work, and reference made to others of similar character. *Andral Clinique Medicale*, tome Ve, p. 454–62, gives two cases. Two are given by Dr. Osborne in the Dub. *Jour. of Med. and Chem. Sci.*, for November, 1833. One of these cases is very interesting, both from the singular nature of the derangement and from the detailed evidence of the soundness of the intellect. Dr. Steele publishes one case in the same Journal, for January, 1845. Two cases are recorded by Dr. Bright in the second volume of Guy's *Hospital Reports*, p. 306; and one by Mr. Robert Dunn in the London *Lancet* for 1850, vol. ii., p. 25 and 254. Besides these cases, two are alluded to by Dr. Holland in his *Chapters on Mental Physiology*, p. 145–6. Sir Charles Bell, in his *Cases and Consultations on Diseases of the Nervous System*, London, 1844, p. 392, gives an account of a boy 10 years of age, who, apparently from disease of the brain, consequent on inflammation of the internal ear, was attacked by convulsions and left hemiplegia, followed by complete loss of speech. The boy heard and comprehended everything, and was uncommonly quick and intelligent, but he could not speak a word. Nine months afterward, there was a discharge of matter through the mouth, and the boy suddenly recovered his speech. Sir C. Bell mentions another instance in which a bright, intelligent boy, whose hearing was perfect, and who comprehended everything that was said to him, had been dumb from birth. Sir B. Brodie, (*Mind and Matter*, Am. edition, p. 50,) alludes to two similar cases, which have come under his own observation. I have references to some other cases of hemiplegia, with loss of speech, but from want both of leisure and the proper authorities, have not been able to verify them. By a little research, I have no doubt the number could be greatly extended.

by any apparent disturbance of the intellect. In three of the following cases, the same phenomenon was noticed. If the last case seem somewhat out of place, an excuse will be found in the value attached to every observation proceeding from its author. The first very interesting case was furnished by Dr. B. Duggan, of this city; the three others are from Dr. A. Clark.*

Case 13.—*External Injury—Headache—Loss of Speech—Paralysis—Intellect Clear—Abscess in the Left Hemisphere of the Cerebrum.*—On December 11, 1848, Kehoe, a stout, athletic laboring-man, about 32 years of age, called at my office, complaining of an annoying, dull pain in his head, under which he had suffered for the last two days. His pulse was about 100 and full, his tongue and skin quite natural, and his appetite unimpaired.

At first, he could assign no cause for the headache, but, after being questioned, he remembered having got a stroke of a slung-shot just fourteen days before the pain began, and on examining the head, I found a slight mark and some tenderness over the left parietal bone, about three inches from the sagittal suture. The man said he had hardly thought of the blow after he had received it, until I prompted him about it, and had never enjoyed better health than he had done during the last fortnight, until a chill ushered in the headache. Supposing the injury to be the cause, I bled him from the arm to faintness, taking about thirty ounces of blood and gave him a liberal dose of calomel, followed by salts and senna.

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* I can not refrain from quoting here some account of the last illness of the late Robert Kelly, Esq. It is taken from *A Tribute to His Memory*, by Edgar S. Van Winkle, a pamphlet not likely to fall generally into the hands of medical men. His disorder appeared to arise from cold, contracted in crossing the East River, in an open boat, in the evening. He complained of chill, but attended to business on the next day. The day after (Sunday) saw him twice at church, but in the evening he had an attack of gout in the foot. On Monday, "he remained at home, with no new symptoms, but on Tuesday morning appeared the first indication of a difficulty in the brain. On rising, he had occasion to ask for a towel, but could not recollect the name for it. During the daytime, there were several similar instances, so that he expressed much surprise, having no idea that the brain was in any wise affected. On Wednesday, his organs of speech were partially paralyzed, so that he could utter none but the simplest words; and he found himself, in his attempts to write, unable to construct a sentence grammatically, or even to spell in all cases correctly. Though he made such mistakes, yet the moment he read what he had written, he detected the errors, and, with a smile, pointed them out to those around him. He would then make a new attempt, never more than partially successful, to correct them. The last note he ever wrote—one which his family will ever retain, full as it is of painful interest—was written to Dr. Webster, in reply to one of the same date. It abounds in errors, but it shows the effort to correct them by numerous erasures and interlineations. The condition of his mind was this: he could comprehend perfectly all that was said to him, and was even interested in the conversation he overheard, but he had not the power to give expression to his wishes or opinions further than by a simple assent and dissent. Each succeeding day of his sickness the paralysis increased, and he grew weaker, until fifty-six hours before his decease, when he sank into a sleep, which terminated in death."

On the next day, the head was shaved, cold applications were applied, and two grains of calomel were ordered to be given four times a day. About the fourth day, his speech began to falter. Dr. A. C. Post was called in consultation, and a crucial incision was made in the scalp, as near as possible to the seat of injury, the flaps turned back, and the skull examined, which was found free from fracture. The wound was dressed with lint, keeping it open; the patient, however, getting worse, and convulsions occurring, Dr. Mott was added to the consultation. The patient, was by this time entirely speechless, but walked stoutly about the room, carrying his slate and pencil with him, and by this means asked for what he wanted, and answered all questions put to him. When he found a convulsion coming on, he would beckon for help, and, with a man supporting under either arm, bear it standing; when it was over he would look round with a smile, then sit down and rest.

It was now determined to trephine the patient; but on taking out a piece of bone, no pus was found, and the dura mater was apparently quite healthy. For the next two days the wound was still dressed with lint, and the calomel, together with aperients was continued, but the spasms became more frequent, and paralysis of the right arm supervened. The dura mater was now punctured, but no pus was discovered. As no other resource seemed left, and the pulse was becoming small and frequent, all medicine was discontinued, and he was ordered nutriment and stimulants. He still continued to write his questions and answers until the hand became entirely paralyzed, but he did not lose his consciousness until he sank into coma; in this condition he lingered three days, and died two weeks after the headache supervened.

On post-mortem examination, an abscess was found occupying almost the whole of the left cerebral hemisphere, and containing from six to eight ounces of pus. The abscess appeared to have commenced directly under the spot where the blow was received, and about half an inch from the spot where Dr. Post had made his exploratory incision into the dura mater.*

Case 14.—*Double Hemiplegia—Loss of Speech—Softening of the Brain—Symptoms.*—The following is the history of the last illness of a worthy physician of this city, who has lately died. For some months he had been losing strength, and growing pale, and had suffered from occasional giddiness. He, however, kept about, and sometimes visited a few patients. On Monday the 13th of October, I saw him with Dr. Sayre; found him disposed to stay at home, from the frequent recurrence of giddiness, and advised some feruginous preparation and a better diet; also quinine. The third day after, Wednesday morning, at four o'clock, I was summoned,

* A case is recorded by Abercrombie (*Ed. Med. and Surg. Jour.*, July, 1818), in which, with hemiplegia and loss of speech continuing six weeks, the understanding remained perfect. The left hemisphere of the cerebrum was converted into "a bag of pus." In this case the inflammation was idiopathic.

and found that he went to bed as well as he had been for the few past days, but about one o'clock, became paralyzed in the whole of his left side, including the muscles of the face, every thing but those of the eye. He could speak but so indistinctly, that the effort to make himself understood was painful to those about him. He stated among other things, that, for some hours before this attack, he had had a prickly sensation on the limbs of that side. He said, in the afternoon of Wednesday, that he had the same sensation in the right side, and that that would soon be paralyzed also. During this day he managed to communicate his thoughts, and was as sound in mind as ever in his life, yet he wept frequently with all the child's distortion of face. This was an occasion of distress to his wife and son, till I explained to them that it was common in paralytic persons, and did not indicate any extraordinary grief.

Toward evening of this day, he lost entirely the power of articulating and, indeed, his voice. At the evening visit, ten P. M., he had not spoken for some hours, and it was discovered that he desired to write. This he intimated, by extending the index fingers, closing the others, and moving it along the bed clothes, as in the act of writing. This, however, was not understood, till he pointed to the other room, and repeated the writing motion. (There were no writing materials in his bed-room). A pencil was then put in his hand, and a sheet of foolscap was held before him. His hand was very tremulous, and his movements very uncertain; his marks were some inches in length, and crossing each other variously. From watching the movements of the pencil more than from the confused marks on the paper, we discovered he was suffering from constraint in his position. We succeeded in understanding a second statement of a similar character. He again attempted to write, but we were not able to understand, and thought, as it cost him a considerable effort, he had better try no more for the present.

The next day, paralysis had extended to the right side, and every muscle of his body seemed to be deprived of voluntary power, except those of the eyes; he breathed, his heart beat, and there were movements and intelligence in his eyes; the breathing was rapid and short, but not stertorous; the pulse but little accelerated; he seemed to recognize every person who came into the room, and he followed the movements of those who were striving to relieve him; he did not swallow; whatever was put into his mouth was breathed into the trachea, and caused cough, and the respiratory action seemed to be so feeble, that it was feared the effect of attempts to nourish him, or administer medicines by the stomach tube, would be to suffocate him, and, after a few hours, all administrations of this sort were made by the rectum.

The next day (Friday), the eyes had still an expression of intelligence, and the patient's brother and son feel confident that he recognized them when they entered the room, and that his eyes

followed them as they crossed the room, but there was marked external strabismus of the left eye; in other respects the eyes appeared natural; the paralysis was now so complete that the lower jaw fell away from the upper, and the tongue fell out of the mouth on either side, according to the inclination of the head on the pillow; the position of the body was often changed to avoid, if possible, the occurrence of bed sores, so that this complete paralysis of the tongue was made very striking. By the evening of this day all evidence of intelligence had passed away; the respiration had become more frequent; the pulse was 130, and feeble; there were jerkings in the limbs of both sides, particularly in the legs; this was noticed on each side, from the commencement of the paralysis, but they were now more frequent; stertorous breathing was now noticed for the first time, but this only occurred when the head was turned so as to produce some little constraint or twisting of the trachea; it was now proposed to introduce the stomach tube, for the purpose of nourishment and medication, but those who had watched the patient most closely objected, having seen that he nearly became suffocated from a change in the position of the head, and, believing he would die from the attempt, it was abandoned.

During Saturday, respiration rose to fifty and sixty in the minute, the pulse to 150 and 160, and the patient seemed to be profoundly comatose; bed sores had already formed, notwithstanding the precaution of changing his position frequently; a water bed was proposed, but not used, because it was too painfully evident that his death was inevitable and near; his urine had been drawn from the second day; it was scanty and highly colored; the fæces passed involuntarily, but not frequently; he retained the nutritive and other injections; he died in the evening of Saturday.

From the time the paralysis had passed to the right side, observing the frequent jerking in the paralyzed parts, his physicians, or some of them, were persuaded that the disease was not apoplexy. Apoplexy of the left cerebral hemisphere occurring on Wednesday morning, at one o'clock, and on the right side in the night of Wednesday, was highly improbable; apoplexy of the nodus cerebri, affecting the right side, would not be likely to pass over to the left; and softening from sanguineous effusion, in so short a time, could not be anticipated; softening, of which the Dr. had himself expressed a fear, in my first interview with him, seemed the most probable view of the case.

The primary lesion in this case was atheromatous disease of the arteries at the base of the brain, and softening of the nodus cerebri, affecting both halves, but most extensive on the right side; this softening did not affect the origin of the olfactory or optic nerves. The motores oculorum and the pathetici were given off above it; but the fifth pair was fully involved in it, and the communication of all the nerves, below the fifth, with the cerebrum, was cut off by it. Smell and sight were, probably, un-

impaired; the movements of the eyes, within certain limits, were preserved; the external strabismus of the left eye, which continued for several hours, is probably to be explained in the same way as the flexion of the limbs, so often seen in cerebral softening —the irritation by the diseased part of contiguous portions which still possess some vital power. In this instance, the left sixth nerve was irritated, the left half of the pons varolii being less affected by the softening than the right; secondary meningitis, so commonly the immediately fatal lesion in softening, existed in this case, and had caused pretty copious serous effusion at the base and over the convexity of the brain.

The nerve vesicles appear to have undergone no change; they retain their transparency, and none of them appear to have become granular.

The extremely soft state of the nervous matter made the examination interesting, in a physiological point of view. Placing some of this soft matter on a slide, and covering with thin glass, the weight of the latter caused the slow and steady extension, or spreading, of the nervous substance. As the nerve vesicles were thus removed from their beds, it was plain that each one had a single, rather firm fibre or thread attached to its walls, and apparently a continuation of them, which ran into, and was lost in, the still undisturbed portion of nerve matter. Many of the vesicles were held attached for a long time by these threads, while others floated past them, and the attached ones would assume a pear, or vorticella shape. There was nothing which is usually called exudation corpuscles, and no inflammatory exudation of any sort.

These threads were elastic, and would yield considerably as the current passed by, and then contract, drawing back the vesicles to their first position. It is not certain that all the vesicles were so attached, but many, both large and small, undoubtedly were; and, in all the instances noticed, this attachment was by a single thread. After separation, no processes could be seen on the vesicles, though, in some, what looked like the contracted vesicular end of the thread. Sound brain matter can not be seen in this way. This thread can hardly be anything else than the axis cylinder of the nerve fibre.

Case 15.— *Cerebral Tumor — Softening and Apoplexy.*— Mr. H., Bank street, about 55 years of age.—June 16, 1857.—Mr. H. was in good health till about six weeks ago, except that he had complained of some pain in his back. At that time, he read his newspaper, as usual, one morning before breakfast, and appeared, in all respects, well, till he came to the table. Soon after taking his place, he turned his eyes toward his wife, as if he wished to speak. She thinks he tried to speak, and could not. She immediately went round to him, asking what was the matter. He made no answer, but almost immediately straightened himself out, and was laid on the floor, where he had a "fit," in which it is said that *the whole* body was convulsed, that he frothed at the mouth,

bit his tongue, and then rested a little, rather comatose. By the time a physician could be procured, he had recovered sufficiently to answer questions imperfectly. He said he had pain and numbness in the right arm, and that it hurt him to move it or have it moved. The pain and numbness soon passed off.

From the time of that attack till about a week ago (about five weeks), there was some uncertainty, or rather, tremulousness, in the movements of the right hand, and some indistinctness in his articulation; yet he could take long walks, and attend to his business as usual, having his usual appetite and the full use of his senses.

Without any new shock or sudden change, about the tenth he had more tremulousness in the right hand. A headache, which had been hardly complained of before, became intense. The eleventh and twelfth, he was annoyed by a sense of offensive odors which no one else could perceive, and by a buzzing in his right ear, which seemed to him so much a reality that he requested one of his family to place her ear close to his, that she might hear it also. His speech became more indistinct, but his family entertained no doubt of the complete soundness of his mind. The pain of which he complained was frontal, but almost wholly to the left of the median line, extending to the temple.

To-day he was in bed, but apparently not very weak, his pulse about 70, and of fair force; tongue covered with a pretty heavy white fur; expression of face natural; lying on his back with his head raised on pillows. It was reported that he has a fair appetite, and that his bowels are in a soluble state. His eyes were bright and expressive, and the pupils symmetrical.

Paralysis.—He moves his hands and his feet with equal facility, but when directed to press my fingers with his two hands alternately, it is apparent that the right has hardly half the strength of the left, and also that the left is considerably weakened. Besides this, the right hand, though sometimes steady in its movements, is oftener shaky, as in paralysis agitans. The eyelids are so far under the control of the reflex principle that he can hardly allow them to be opened by the finger to admit the light suddenly; he holds them firmly together when the attempt is made, and draws away his head. It is, however, seen that the pupils contract in the usual way. Dividers were used to ascertain whether the sensibility is impaired. He could distinguish two points when they were separated about three quarters of an inch and drawn longitudinally along the arm and forearm, and at about an inch on the leg. There was no perceptible difference in distance at which two points could be distinguished on the two sides. He could bring his lips together and whistle pretty well, yet, in laughing, the muscles of the left side of the face are more strongly contracted than those of the right. The tongue, strongly protruded, does not turn to either side.

Speech.—He can not communicate his ideas in a connected sen-

tence. He may begin correctly, but he loses his words almost immediately, and can not recover them, uttering unmeaning but not inarticulate sounds. Monosyllables he usually speaks promptly enough, as "yes" and "no," "one" and "two," but compound words he often fails to pronounce, though they may be the first in the sentence he wishes to utter, and then he fails wholly to communicate his thought. He seems to be as conscious as his hearers that he is not saying what he wishes to say, and makes a great effort to pronounce the word or words that he needs. Occasionally he catches a phrase which probably expresses part of his thought and repeats it, as, "it is of no use!" "it is of no use!" while he leaves us to conjecture as to what it is that is of no use. His *gestures* are, however, sufficiently significant; and, so far as could be ascertained, his recollection of the past was complete.

His Mind.—His family thinks it is perfectly clear, and so far as an hour's examination would enable me to judge, through its imperfect modes of expression, it was far from being evident that it was not.

Writing.—This patient was asked to write, as he could not speak distinctly, but the attempt was not successful. He was first asked to write his own name. His face at once expressed anxiety and thought; he threw his head back on the pillow, and looked upward to abstract his attention from everything else, and, for half a minute, seemed to make a great effort to remember his name; then, raising his head, he directed his pencil toward the paper, as if he had some hope that the writing attitude would assist his memory, but nothing came of it. He could not write his name, apparently because he could not remember it. He was then asked to write *John White.* He seemed ready to try, but was at a loss how to begin. He was then asked to write *John*, the word being often repeated, as he held his pencil to the paper, yet he could not begin. No better result followed the deliberate and repeated spelling of the name for him; it seemed as if he had forgotten how to make the characters. *John* was then written for him; this he imitated tolerably well. He then tried *White.* He made the *W* and part of the *h*, and then went on making marks without meaning. Looking at this when he stopped, he appeared to know that it was not *White.* Thus, he seemed to know well enough what he wished to do, but could not form the letters in connection with their significance.

In such a case, there is great difficulty in ascertaining whether the mind is enfeebled or not, for the physician must first become familiar with the patient's new language of gesture, expression of face, and attitude; still, so far as could be learned from syllables of words which he could not complete, and a few short phrases of easy words, from gestures and actions, his mind seemed to be unimpaired; he made us understand that what had been done for him, thus far, had done him no good; was, he said, "no use;" his wife, who is his constant attendant, is confident that his mind is not affected.

July 12.—There was no sudden or violent change in this patient's condition till his death; a few days after the visit on the 16th of June, finding the effort to speak was unavailing, he ceased to try; thenceforward, he communicated his wants by gestures; the changes in his condition were slow; he did not improve in any respect; he kept his bed, except that, every day, he sat in an easy chair, to have the bed changed; he communicated his wants easily to the family; his appetite was fair, so that he seemed to eat with a relish what was brought to him, and his strength did not materially diminish, though the same amount of paralysis continued.

I saw him on July 6; he was asleep when I entered the room; he slept so soundly that it was difficult to awaken him, and when that was accomplished he did not seem to be wholly himself; I could not learn from him whether he remembered to have seen me on my former visit; during the visit, he did not seem to recover his recollections; he had had this heavy sleep for twenty-four hours; his pulse was hardly excited; the pupils had some mobility, and it was about equal in the two eyes; till within the last few hours, the family did not doubt that his mind was perfectly clear; this somnulence gradually passed into coma, and he died yesterday, July 11.

Of late, the pain in the temple seemed to have ceased; he did not suffer from it much after June 20; whether he had the unusual roaring in the left ear is not known, or the disagreeable odor; this odor seems to have been very disagreeable while he could speak; he would then blow from his mouth, and exclaim, "My God, what a smell!" or, with the same action, "Where does this stink come from?" he seemed to perceive it only at times.

Autopsy.—The *brain* only examined. Cancerous tumor, apoplectic cyst, softening, and the left olfactory nerve involved in the inflammation in the fissure of Sylvius.

The *dura mater* presented nothing remarkable; the *pia mater* was of a dark red color, and the vessels were full, and of a dark venous color; at a point about the union of the left temporal with the left parietal region, and on the level of the supra-orbital ridge, was an unnatural plexus of vessels of apparently new formation, and underneath this was softening of the cerebral tissue; the membranes on the convexity were rather dry, but, with the dark venous color which marked the surface, there was a milky hue of the arachnoid, particularly marked along the course of the large vessels; at the base, and extending into the foramen magnum, was some fluid, an ounce or two; the right lateral ventricle was filled with transparent serum, and enlarged; vascularity of its walls considerable; the left was not enlarged, but its lining membrane was thickened, and the vessels were covered and obscured by a gelatinous and lymphy deposit; this ventricle was near to the seat of the principal disease; the membranes at the base were more opaline than those of the convexity, and they were thickened by old fibrinous exudation, particularly behind the optic commissure, and along the nodus cerebri.

The principal disease was found in the inferior and anterior portion of the left middle lobe of the cerebrum ; here, in the middle fossa of the cranium, lying against its internal boundary, and filling about one-third of the fossa, was a cancerous tumor ; this was nearly round, about the size of a Madeira nut, was covered by the pia mater, and adherent to the dura mater ; it seemed to have been formed in meninges, and not in the cerebral matter ; directly above, and behind this, the brain matter was very soft, so that, when the organ was turned the base upward, this part of the middle lobe sank away into a deep pit, and, just under the membranes and the cortical matter, the structure was so soft that it would flow from side to side, as the brain was turned ; this pit did not correspond with the position of the tumor, but was the consequence of softening, and an almost empty apoplectic cyst in this part of the brain ; a section into this part opened a cyst, which contained a very little yellow serum, but not half enough to fill it ; the cyst had a delicate lining membrane, which was vascular, and its capacity might have been two fluid drachms ; this cavity was under and outside of the lateral ventricle, and did not communicate with it, but seemed to curve about its anterior horn ; on the inside of this cyst were the remains of a blood clot ; on every side of this cavity, but mostly upward, inward, and outward, the brain matter had undergone softening, so that, in portions, it was diffluent ; the softened portion, including the apoplectic cyst, was nearly equal in size to a hen's egg ; it was the white softening, in the main, with a faint tint of dirty yellow in certain parts.

Another very interesting point is this. As the softening reached nearly to the anterior limits of the middle lobe, the irritative action about it had caused adhesion of the middle to the anterior lobe, so as nearly to close the fissure of Sylvius. To ascertain the cause of the perverted smell, the olfactory nerves were examined on both sides, and nothing was found which could be called unnatural, in either of them, except this : in tracing the divided fibres or roots of the left, it was found that the outer (largest) division, just before it became lost in the cerebral matter, passed through a considerable deposit of adventitious fibrous tissue, not recent, and that this branch of the nerve itself had the grayish-yellow tint which nervous matter is apt to assume when affected with chronic inflammation.

The tumor, on microscopic examination, was found to be composed of cells, with very few fibres ; the cells were, most of them, small, of the size usually regarded as nuclei ; a few only were fully formed ; irregular fusiform cells existed in small proportion ; cells, such as would in other tumors be pronounced cancerous, also existed.

The softened brain matter hardly contained a single continuous or unbroken nerve fibre ; it was mostly reduced to a fine granular substance, with a few rings of broken nerve fibres, and a great abundance of exudation corpuscles, and only a little fat.

This case occurred in the practice of Dr. Griswold, and I saw it in consultation with him and Dr. Tucker.

Cerebral Disease—Epilepsy—Paralysis.—January 20, 1857.—I have visited with Dr. P. White, for the last two months, a patient suffering with cerebral disease. The following is an account of the case, chiefly from notes taken at the time of the visits :—

Mr. G., æt. 58 years, is a large, well-formed man ; engaged in mercantile or brokerage pursuits ; of strong appetites ; accustomed to the use of beer and porter, but never using the alcoholic drinks to excess. He enjoyed good health till thirteen years ago, when, without cause appreciable to him, he was seized with *epilepsy*. The first attack occurred in the evening, about ten o'clock, just before bedtime. He was insensible for five or six hours ; after that slept naturally, and rose the next morning as usual. After breakfast, going to his business, he was again seized, in Nassau street. This attack was preceded by, or rather commenced with, a strange and unaccountable feeling of dread and sense of danger, and an involuntary swinging of one arm backward and forward. He had time to beckon a friend to cross the street and assist him, before he became insensible. This attack lasted half an hour ; after which he went on, and attended to his business for the day. Two or three weeks later, he had another attack. This occurred in his office, down town, and Dr. Bolton was sent for, and saw him. His regular physician was Dr. Bradshaw. He then left his business for six months, going to his father's house. For two or three weeks, these attacks were frequent ; but, under Dr. B.'s management, they soon grew less frequent and less severe. At length, after six months, he returned to business, and was free from the severe epilepsy for two or three years. In 1846, he went into the New York Hospital (Dr. Buel), for wry neck, and epileptic seizures. The premonition of the epileptic fits was often a sense of numbness in the arm. The first attack was preceded by numbness in both arms.

When he had not the full seizures, he was subject to numbness in the right leg from time to time, more, perhaps, after fatigue than at other times, but often coming on without known cause. This sensation would begin in the foot, would creep up the leg, producing a feeling as when the leg and foot are "asleep." It usually mounted upward as high as the ribs, never higher—producing and ending in a sensation as if the heart was beating at the point where it terminated, (spasmodic action of the diaphragm ?) During the continuance of this singular feeling, he had no power to use the right leg. It was paralyzed, he thinks, for the time. These minor attacks lasted a few minutes only, and usually left him without appreciable consequences. His health, during most of the time he was subject to them, was in other respects pretty good. He remained in the hospital for some months, had there some attacks of epilepsy, and very often the peculiar affection of the right leg, etc. Since he left the hospital he has

had no full epilepsy, but the minor attacks continued to trouble him for about five years after (till five years ago).

From 1846 to May, 1856, his general health was pretty good, with the exception of the numbness, and, in 1855, ulcus depascens morbi gallici, as his physician supposed, which was promptly cured. In May, 1856, numbness returned in the right leg, but it does not appear to have the same peculiarity as before; he does not speak of it as mounting upward to the ribs, but says that it came many times a day, and would leave him on the application of cold water and friction. This continued into June. In the early part of that month, he was seized, one night, with numbness of the whole body, some nausea, and loss of muscular power, so that he could not get out of bed without assistance. He could speak at that time, for he called for assistance; he could move his limbs, but was "so weak he could not get up." Two or three days after this, he lost the power of distinct articulation. When Dr. B. saw him at this juncture, his faculty of speech was greatly impaired, so that he could make himself understood only very imperfectly. There was general but incomplete paralysis, somewhat greater on the left than on the right side.

Present condition.—November 19, 1856.—His speech and power of motion have improved since the attack in June. He is now rather pale, but does not seem to have lost much flesh. His movements are, within certain limits, quick and energetic. He strikes his knee more firmly with the right hand than with the left, but crosses the left leg (in sitting posture) over the right with about the same ease as the right over the left. He performs both movements clumsily, but quickly. He does not often attempt to walk without support; he has, however, walked across the floor of his room two or three times in the last two months, but when he attempts it he is constantly afraid of falling *backward*. He walks around the room by taking hold of the mantelpiece, the door-knobs, tables, etc., or by pushing a chair before him, and leaning forward upon it. In these exercises it is evident that he uses the left hand more awkwardly than the right, and he moves his legs clumsily, and only through short spaces, with much uncertainty regarding the direction of their movement. Pressure by the right hand is firmer than that by the left, but he has not much strength in either. The appetite is fair, and the functions generally are pretty well performed, except the motor. The urine is considerably loaded with phosphates. He reads little, having lost one eye nine years ago from inflammation, and the vision of the other being easily fatigued. He can write a few words, but the characters are irregular, and scarcely legible; he writes with labor, but will try when asked.

His *speech* is rapid, but his articulation is indistinct, so that many words are wholly lost, and often a succession of them, then, nobody can understand him; yet, commonly his nurse can catch his meaning, but often only on repetition. A stranger can not under-

stand him without great patience and leading questions on his own part, and frequent repetitions on the part of the patient. The latter he seems to look for as a matter of course, and will try over and over again till he is understood. He does this at least to his physicians, without excitement or impatience. His countenance aids him but little, since while he talks there is very little variety or meaning in its expression.

Temper and Mind.—He is often playful and boyish in his manner. On my visit, in reply to something said by his physician, he clenched his fist, and extending it toward him, said, laughing heartily, "I will knock you down," repeating it. Seeing this light trifling in an old man suffering from grave disease, I thought he had become imbecile and childish; but when we sat down to gather the facts relating to his health, going back to his early sicknesses, and requiring a connected history of the last thirteen years, no patient ever gave a clearer or more circumstantial account of everything relating to his condition than he did. In naming the physicians who had attended him during this long period, he remembered their addresses at the time. Knowing them all, I required a description of each, and his opinion of each. His opinions were sound, and his memory remarkably accurate. In all these matters, and others requiring reflection and memory, his mind was perfectly clear. Certain money accounts were referred to and dwelt on. He made a mistake in his computation, but corrected it promptly himself. Some examination was made of his recollection and judgment regarding money transactions that had taken place since the beginning of his present illness. On these, too, he was equally clear. Yet, with all this unexpected accuracy of judgment, and really mental quickness, there was a remarkable exaggeration of his

Emotional Symptoms.—He does not weep, but he laughs immoderately on every trifling occasion. He scarcely smiles (and he is of a lively and happy temperament), but he is seized with convulsive, hysterical laughter. His nurse said, with more physiology in her remark than she supposed, that his laugh ran away with him. When he makes a bad step in walking, and another person in similar circumstances would smile, to indicate that he felt no alarm, or that he had not succeeded as well as he expected to, this patient laughs boisterously and almost uncontrollably, and so under other circumstances. There is something of the emotional element in his breathing while he strives to converse. He takes frequent and almost convulsive inspirations preparatory to uttering his words, and while speaking.

These exaggerated emotional manifestations are common in those who suffer from head diseases, and even the physician is often betrayed into the belief that they are evidence of mental weakness. They attend diseases in which the intellectual forces are not materially changed, as well as those which enfeeble the mind. They were very noticeable in a near relative of my own.

He had an attack of apoplexy five or six years before his death. After he recovered from the immediate effects of the effusion, he had the same kind of difficulty in articulation which this patient has, though not so great; still, he required an interpreter in conversing with those who were not in daily intercourse with him. He did not laugh, but, as most commonly happens, wept on slight occasions, as he never did before the attacks. When he wept, his whole countenance yielded to the emotion as children do. But he transacted all his own business, with the aid of an interpreter, and did it as discreetly as ever in his life. His thoughts and judgment were never clearer or more solicited by his friends. Not a cloud or shadow passed over his intellect, to dim it for an hour, till it was buried in his last illness, at 74 years of age.

The same fact was conspicuous among the symptoms that attended the fatal illness of the late Dr. Green; so long as he could communicate his thoughts, no one of his physicians, or of his family thought for a moment that his mind was in the least degree impaired. Yet, during this period, he wept inordinately. This so distressed his wife, that it became necessary to explain to her, that his tears and extraordinary weeping and distortion of face, in this paralyzed condition, signified no more than a simple expression of sadness would have done in health.

The patient, Wilcox, at Bellevue Hospital, weeps as often as his physician calls his attention strongly to his misfortune. His face becomes as much disfigured as that of a weeping child, and his tears flow freely, as he points with his left hand to the right side, or raises the right arm with his left hand, to the notice of the physician. His action and countenance say as plainly as articulate language, "This is my affliction, the power is gone." The language of his countenance, is often eloquent, and all that he does or indicates by gestures, shows that his mental condition is very far from childish imbecility. He is hemiplegiac on the right side, and is unable to utter a single word.

Since this case was recorded, I have met the physician, who, according to the patient, was called during the third attack, thirteen years ago. He says that he lived then where the patient states he did, that he was called to see a gentleman having epilepsy, that as the attacks subsided, he was put into a carriage and sent home, but the Doctor does not remember the gentleman's name. The former physician, Dr. B., confirms the patient's account of himself, as given above, and adds, that he regarded the epilepsy as having had a special cause. The patient is still living, but has left town.

The epileptic attacks in this case, were at first severe. They continued six or seven months, and then recurred in 1846, after an interval of two years and more, but in a milder form; the minor seizures continued for seven years, yet, there is no reason to suppose that his mind was enfeebled by either form of the disease.

Cases of a similar sort have occurred to most physicians, and I can not resist the conviction that the books usually regarded as "authorities" have overstated the obstinacy of the disease, and have given too little prominence to the cases in which it has produced little or no effect upon the mind. I have now under observation three cases in which a regulated diet and observance of the best rules of living, with little or no medicine, have preserved the patients from attacks, for twelve, seventeen, and eighteen months in the several cases. I have of late repeatedly seen and prescribed for a person who has had epilepsy for *thirty-three years*, occurring several times in every month, and sometimes eight and ten times a day; in whom, though there is obvious enlargement of one side of the head, and much headache, and the tongue bears the marks of countless lacerations, being fringed on its anterior third, with a most extraordinary red, spongy, thick, warty border, yet it is impossible to discover in this person the least change in her mental condition. It is, perhaps, proper to add that both the medical profession and the judicial bench of this city can each furnish, at least, one illustration of the distinction and usefulness to which persons who have been, or still are, subject to epilepsy, may attain.

ART. VI.—*Report of the Practice of the Bellevue and New York Hospitals.*

BELLEVUE HOSPITAL.

Report of Fourteen Cases of Mammary Abscesses Treated with Compressed Sponge, (Dr. Foster's method). By. JOHN G. JOHNSON, M.D., House Surgeon to Bellevue Hospital.

A brief notice of some of the means proposed by practitioners and writers of eminence, in the treatment of mammary abscess, will show how various have been the methods adopted.

Sir Astley Cooper says "sometimes an abscess is produced at a great depth, forming sinuses of various extent; the best mode of treatment in these cases, as far as I had an opportunity of observing, is to *inject them with a solution of two or three drops of strong* sulphuric acid to an ounce of *rose-water*, and to apply the same solution by folds of linen cloth over the bosom, by means of which secretion of milk is checked and adhesion is produced."

Erichsen, in his *Science and Art of Surgery*, remarks, "the sinuses that are left, may usually be got to close by attention to the general health; should they not do so, however, the employment of pressure and the use of *stimulating injections* may in time accomplish this. In the event of their proving rebellious, it has been proposed *to slit them up*, but this is an unnecessarily severe practice, and may, I believe in all cases, be dispensed with."

In Miller's *Practice of Surgery*, we find the following:—"In severe or neglected cases the gland may be as it were dissected out

by the matter separating its component parts, or many sinuses may form communicating with each other, intersecting the whole mamma, and mixed up with intercurrent abscesses. Such sinuses do not require to be each incised throughout its whole extent, the knife following mercilessly on the probe. It is enough to secure satisfactory evacuation by suitable counter-opening, and then by pressure to favor contraction of the cavities. In this we generally succeed, and continuance of the pressure is further useful in promoting discussion of the morbid parenchyma, in which the sinuses are placed.

It may be applied by bandaging, by careful application of strips of adhesive plaster, or by means of air and water, contained in caoutchouc tissue, as recommended by Mr. Arnott."

Churchill, *Diseases of Females*, says, "when sinuses form, the only remedy is to *lay them all open.*"

Dr. Meigs, *Woman and her Diseases*, remarks, "when the suppuration has taken place, the matter ought to be discharged by means of a lancet as soon as the abscess fairly points ; where the cavity has become empty by the discharge of pus, let the breast be compressed by *means of strips of adhesive plaster* which constitute the most convenient suspensory, and compress for the organ. I am confident the use of the adhesive strips has enabled me many times rapidly to cure a breast which I should vainly have endeavored to cure in double the length of time by any other dressing." In the treatment of the fistulous openings he says, "When I find such one, I push to near the bottom *a very small bougie, made extempore of cære cloth*, filling the orifice of the fistula, and probably irritating the internal granulations to a more healthful activity ; the bougie soon arrests the flow of milk from the orifice. The bougie daily becomes shorter at each successive repetition, and the fistula heals."

A method of supporting the breast with strips crossing each other, is recommended in the London *Lancet*, for 1846, page 554, The strips should cross each other, and firm compression over the whole by a bandage passing round the body should be made.

Ramsbotham recommends the use of astringent injections, particularly of *nitrate of silver*, as a stimulus, together with compression by strips. Dr. Physic, of Philadelphia, used the seton, and his method is thus described by Ramsbotham in his late work :—"Dr. Physic has succeeded in perfecting a cure by an operation less hazardous than that suggested by Hey, and recommended by Burns—the employment of a seton. An armed probe is to be passed down to the extremity of the sinus, and cut down upon from without. The silk is then to be drawn into it and allowed to remain three or four weeks undisturbed. The indication for its withdrawal being a diminution in the quantity, and an amelioration of the character of the pus."

The method recommended by the elder Hey, of Leeds, was to cut through the whole length of the fistula. This operation has re-

ceived the countenance of high authority. Velpeau, in his new work on the breast, states that the only way to treat these sinuses when they form is to slit each one of them freely open. In the *British and Foreign Medical Review*, January, 1842, is an account of a case treated in this way, where, to use the author's own expression, the breast hung in shreds, and was ever after useless." The writer mentions three other cases in which he has operated in the same way.

MM. Trousseau and Countour, in the *Journal des Connaissances Medico-Chirurgicales*, Fevrier, 1841, have a long article to show the utility of compression of the breast by means of strips of diachylon plaster, an inch broad, and several feet in length, carried completely round the body so as to produce regular and methodical compression of the whole breast. His conclusions are :—1. Compression may be employed in all forms of inflammation of the breast of nurses. 2. It will sometimes cure when used at the commencement of the inflammation. 3. During suppuration it will not arrest the formation of pus, but it immediately relieves the pain. 4. Compression should be made twenty-four or forty-eight hours after the abscess has been emptied. 5. Under its influence the pain ceases ; the walls of the abscess unite ; fistulæ are cured ; and in a few days there is complete recovery ; continued for a time it prevents relapse.

The above are *some* of the methods of treatment proposed by writers of distinction. It will be seen that *compression* of the breast is recommended by most of the more modern writers. The indications to be met, are :—1. To force out the pus as fast as it forms, so as to prevent its burrowing. 2. To afford support to the breast, and, at the same time, bring the sides of the abscess and fistula together, that union may be effected. In order to allow the pus to escape, the orifice of the sinuses must be kept open, and not covered by strips. To apply firm and even compression over the whole breast, at the same time leaving the orifices of the sinuses exposed, is an accomplishment which few, even of those who are in the daily habit of using adhesive plaster in dressings, possess. If the orifices are covered by the strips, there is danger that new abscesses will form from the hindrance to the escape of the pus ; if the strips do not cover the whole breast, there is danger that some portion of the breast may not be fully supported, and thus, matter will be allowed to collect and cause additional trouble.

To be able to give firm and even compression to the whole breast, and at the same time to allow the free exit of the pus, and to have this done so gently as not to add irritation to the disease, is certainly a desideratum. The following plan of treatment was directed by Dr. Stephen-Smith, visiting surgeon to the hospital, in a case (Case 1) of mammary abscess, which had long been under treatment in the second surgical division, but which had, thus far, remained intractable :—

Method of Treatment.—The softest pieces of sponge should be selected, each piece being large enough to cover the entire breast. The sponge should be carefully washed to remove any gravel, shells, etc., it may contain ; and, when it is thoroughly dried, it is to be compressed for a long time under a heavy weight, or between the lips of an ordinary carpenter's vice. The sponge, when thoroughly pressed, should be bound as firmly to the breast as the patient will allow, by means of a bandage passing several times around the body above and below the other breast, a piece of lint being placed between the breast and the sponge, to prevent the latter from irritating. It is then soaked with cold water, and the bandage preventing the sponge from expanding outward, its expansion makes the desired pressure upon the breast. The patient usually complains of pain for ten or fifteen minutes after the first application. The temperature of the water-dressing is soon raised to that of the body, and thus we have the essential elements of a poultice—heat and moisture—without the inconvenience of an ordinary poultice. This soft, yet firm, compression adapts itself evenly and equally to the whole breast, and the sponge not only forces out the matter, but absorbs it ; the sponges are to be kept wet during the whole time of their application. The patient soon becomes accustomed to them, and the alleviation of the suffering is so great, as to cause her to request the continuance of the treatment. The sponges should be renewed daily.

Case 1.—Ann Murphy, American, unmarried, æt. 15½ years, of feeble constitution, was delivered, after an easy labor, of a female child, on July 4, 1856. The nipple was small, and she did not keep the breast fully drawn ; as a result, the breast gathered and a mammary abscess was formed. The breast was opened the seventeenth day after delivery ; it was poulticed for a short time, and then supported by adhesive strips, but abscesses continued to form, though she was placed on animal diet, porter, wine, and quinine. She was transferred from the lying-in wards to the surgical wards on the 7th of August, with five deep fistulous openings in the breast. She had obstinate constipation, her bowels often being unmoved for a week or more at a time ; this had been the case during pregnancy and since confinement. The treatment adopted in the surgical wards was directed to the regulation of the bowels, and extra house-diet, wine, porter, and quinine, while the breast, as before, was supported by adhesive strips. The breast continued to gather, and was as often opened. The child was sent out to nurse, with the expectation that this drain upon the mother's system being relieved, the breast would heal ; but the suppuration continued, until the breast was lanced the twelfth time, while most of these openings degenerated into fistulous canals. On the 4th of October, the compressed sponge was applied ; at this time there were seven deep sinuses running through the breast, in the course of some of which, the probe could be carried behind the gland to the extent of between two and three inches,

others passed in different directions into the substance of the gland. The patient was at this time quite nervous, and the very idea of applying anything to the breast as hard as the compressed sponge, aroused such opposition that it was with great difficulty she could be induced to submit to its application. It was applied in the usual way; for fifteen minutes the pain was severe, but after that, the patient did not complain. It was left undisturbed for the whole day and night, simply keeping the dressing wet. The next day the sponge was replaced by a new one. At the end of the sixth day the discharge had entirely ceased, and the sponge was allowed to remain for two or three days without removal. At the end of the third week the breast was entirely healed, the sinuses closed, and only some little blueness around the cicatrices, and some induration of the breast remained. She continued to wear the sponge during the remainder of her stay in the hospital, to produce the absorption and dispersion of the induration. She took her discharge October 30, and entered the kitchen of the hospital as a worker, where she continued under almost daily observation for the ensuing three months. She continued to wear the sponge for the first month of her work in the kitchen; and when she left, the breast had assumed its normal shape. The nipple was natural, the induration and blueness had disappeared, and the cicatrices were the only traces left of the previous trouble.

Case 2.—Bridget Bennet, æt. 20 years, American, spare, married, was delivered, on December 17, of a boy. The labor was easy, and the child died on December 31, of infantile syphilis,—the copper-colored eruption being fully marked on the body, with excoriation around arms and nates. She had but little milk in her breasts at the time of the death of the child, and neglected to have them drawn. January 7, she was transferred to the surgical side for periostitis of the tibiæ, for which she was treated. Four days after the transfer, her breast suppurated. It was freely opened, and, after complete evacuation of the pus, the breast was compressed with strips, and the bandage passing completely around the body, as suggested in the London *Lancet*. The next day, the dressings were changed to the compressed sponge. The second day, the patient had a chill, and the discharge of pus was about three ounces; the sponge was continued, and on the eighth day the sinus had closed. The breast healed, with the exception of the induration. The sponge was continued about a month, when the induration had entirely disappeared, and the cicatrix was the only vestige of the former trouble. She remained in the hospital till April 21, for treatment of her constitutional disease, but there was no further trouble in the breast.

Case 3.—Ann Riley, æt. 20 years, seamstress, single, Irish, was delivered of a male child, October 25. When the child was seven weeks old she was transferred to the surgical wards, with one breast about twice the size of the other, very much inflamed, having had several chills. Having no distinct fluctuation, the

compressed sponge was applied, in accordance with the suggestion of Trousseau, to prevent suppuration; and the patient was put upon quinine, extra diet, and wine. The breast was extremely painful, and the chills occurred the next day. The third day the breast was violently inflamed and so painful that the sponge was discontinued and flaxseed poultices applied, the breast being supported by means of a handkerchief passing over the back, beneath the inflamed breast and over the opposite shoulder. The breast was opened in a few days, and the discharge was about twelve ounces. Her child was sent out to nurse. When the violence of the inflammation was checked, the breast was treated with compression by strips. She remained under this treatment for several months, not being discharged from the hospital till February 24.

Case 4.—Mary Brown, English, of strong, vigorous constitution, married, was admitted October 16. She was within a few days of confinement, and had a mammary abscess with three openings, produced by striking the breast violently against the corner of a table, while employed in household duties, six weeks before admission. She was delivered on October 20, and, two weeks after, she was transferred from the lying-in wards to the surgical wards, for treatment of this abscess. It was now two months standing; had four fistulous openings, and discharged a considerable amount of milk with the purulent discharge from three of the fistulæ. She continued to nurse the child from the sound breast, and the extra diet allowed was a single egg, a bottle of porter, and four ounces of wine per day. The compressed sponge was immediately applied. For two days, the amount of the discharge seemed to be increased by the pressure, but after that, it rapidly diminished; and on the seventeenth day, the only discharge was a little blood from a superficial opening in the fistula under the nipple. On the twenty-third day, the fistula had closed; and on the fourth week, the sponge was discontinued altogether. The patient was allowed to remain in the hospital until December 16, without any other dressings on the breast than the ordinary supporting bandage passing over the opposite shoulder. She continued to nurse the child; and when discharged, the only evidence remaining of the abscess was the cicatrix. The induration had disappeared, and the breast was reduced to its normal size.

Case 5.—Mary Ann ———; came under treatment December 1. She was 27 years of age, of average health, had had necrosis of lower portion of left femur when a child, and a sequestrum had been removed; with this exception she was healthy. She had not allowed the child fully to draw the breast, on account of sore nipples; and, as a result, she had an abscess which was now between six and seven weeks' duration. It had previously been dressed with strips, and had now five fistulous openings of considerable depth. The discharge was about two ounces per day.

She was treated by the compressed sponge ; the discharge daily grew less, and the fistula had entirely closed on the fifteenth day. Patient remained for a month longer under observation, the breast being simply supported by a suspensory bandage, as in previous cases, and she nursed the child during the whole time. When discharged, but slight induration remained.

Case 6.—Ellen ———, æt. 23 years, married, Irish, came under treatment December 4 ; says she caught cold in the breast. An abscess formed, which had been discharging for five weeks when she came under treatment. There were three fistulous openings. The compressed sponge was used, and in a week's time the fistula had entirely closed. Dr. Stephen-Smith was accustomed to exhibit this case to the students, to show with what extreme rapidity these fistulæ will close under this treatment. She was a strong, healthy woman, and had during her treatment an extra diet of eggs, porter, and quinine ; the child was also spoon-fed part of the time ; remained under observation for a month. The sponge was kept applied for two weeks, and afterward the suspensory bandage.

Case 7.—Margaret Dempsey, married, æt. 25 years, of good constitution, was delivered, after an easy labor, of a male child, December 20, 1856 ; the child died, and on March 23, 1857, she attempted to draw the breast with the breast-pump, but did not fully succeed ; she also caught cold. The right breast soon became very painful, she had rigors and the breast was allowed to open spontaneously. She was admitted to the hospital, April 28, the breast being inflamed, and having a profuse purulent discharge. The breast had been considerably irritated by her removal to the hospital, and an ordinary flax-seed poultice was applied, and an anodyne given ; the poultice was continued the second day after her admission ; the third day it was dressed lightly with strips to support the breast, and the poultice applied ; on the fourth day the compressed sponge was applied in the usual manner. At this time there were three fistulous openings running behind the mamma. There was also considerable œdema of the breast, it being nearly double its normal size. The sponge was removed next morning, April 3, and about three ounces of pus pressed from it and the sponge ; she complains of pain for about ten minutes after the application of the sponge, when the breast becomes quite comfortable ; she is put upon extra diet, eggs, wine, and quinine ; the sponges are renewed daily, being wet three or four times during the day. May 13.—Discharge about half an ounce ; openings are nearly healed. May 20.—Two of the openings have entirely closed, the third is superficial ; the discharge hardly noticeable ; some induration, and breast nearly of normal size. May 24.—Sponge removed altogether, and the breast simply supported by the suspensory bandage. May 28.—Slight induration remaining and blueness around the cicatrices ; patient took her discharge cured.

Case 8.—Bridget Ward, Irish, æt. 22 years, married, good con-

stitution, eighth month of pregnancy. About ten weeks before her admission, she received a violent blow upon the right breast, which caused the abscess. She had frequent chills; the abscess was allowed to open spontaneously, the physician who was called in declining to do anything, on account of advanced pregnancy. A poultice was kept to the breast, and when admitted, May 8, she had eight fistulous openings. A poultice was applied; ordered ol. ricini to clear the alimentary canal. May 10.—The breast having been poulticed for two days, the compressed sponge was applied, but not as firmly as in other cases. May 12.—Two of the openings have closed; discharge about two ounces. May 13.—There are but three openings from which there is any discharge; the patient has the best house-diet, with wine and quinine. May 17.—The dressings are removed; the fistulous openings no longer exist; the patient's general condition is very much improved; a suspensory bandage is retained. May 28.—Patient was transferred to lying-in ward, and delivered of a fine male child. While in the lying-in wards, this patient had a slight attack of puerperal peritonitis and metritis, and afterward of puerperal mania. She recovered from these; except a little congestion of this breast at the time of the appearance of milk in the other, she has had no trouble; the breast is now of its normal size, and the sponge is continued to cause the dispersion of some little induration at the seat of the previous disease. Discharged June 25; induration entirely disappeared.

Case 9.—Margaret Donahoe, Irish, married, æt. 19 years, of delicate constitution, was delivered March 19, of a female child, first delivery. The nipples being very small, she employed shields, and the child could not succeed in emptying the breasts of their milk. They became several times congested; this was relieved, but the breast being imperfectly emptied, the left breast inflamed, and was lanced on April 13. She continued nursing her child till a week previous to her admission. On May 4, the breast had been poulticed for a week after being opened, and then the strips were applied, and had been up to the time of her admission to the surgical wards. When she was transferred she had six openings in the breast. She seemed to have caught cold, and poultices were applied for two days, and then the compressed sponge. May 6.—The discharge at first was about three ounces per day; the patient complained of pain in the breast for about ten minutes after each application of the sponge, which was daily increased in tightness. May 14.—There is a discharge from but three of the openings, two of which discharge freely. May 18.—Three ounces of pus discharged; the dressings have been allowed to remain on for two days. May 20.—The discharge is now from but one opening, the other fistulæ are mere excoriations of the skin. May 24.—Discharge is only half an ounce, and the opening is nearly closed; breast resuming its normal color and size. The patient remained in the ward till June 30; when discharged the indura-

tion had almost entirely disappeared, and the breast resumed its normal appearance. The sponge was continued in this case up to the time of the discharge of the patient, to favor the softening of the morbid induration.

Case 10.—Ann Moore, æt. 17 years, delicate constitution, was delivered of her first child, March 26. Bowels much constipated since delivery. Both before and after her delivery she suffered from sore nipples, and the shield was used to protect the breast. As a result, the breast was not fully drawn by the child. She endeavored to draw them by the breast-pump. The left breast was opened April 19. Patient had had several chills, and about four ounces of purulent matter discharged. The breast was then poulticed for three days, and supported afterward by adhesive strips. The patient was transferred to surgical wards May 4. The sponges caused considerable pain for the first fifteen minutes after each application. There were three openings—one of them could be traced very deep. Mother continued to nurse the child, but it was thought that this was too great a demand upon her strength, and the child was accordingly put out to nurse, May 14.

May 15.—Breast seemed more painful in one spot, and was opened ; but there escaped only a small quantity of blood ; from one of the openings there is a slight discharge of milk with the pus. May 18.—One ounce and a half of pus discharged from one opening only. May 21.—Discharge, half an ounce ; the breast resuming its natural shape ; blueness disappearing. May 24.—Simple excoriation of skin ; sponge not applied ; suspensory bandage used. She has had the extra diet, porter, wine, eggs, and quinine. Her general health was much improved. Patient took her discharge June 11, entirely cured, except a slight induration remaining.

Case 11.—Catharine Carrol, Irish, æt. 21 years, domestic, in good health, was delivered of her first child, March 8. Bowels constipated ever since. Her breasts not being fully drawn, the left breast gathered, and was opened one week after her confinement ; poultices were applied for a few days, and then the adhesive strips ; this treatment was continued till May 7, when she was transferred to the surgical wards, with five fistulous openings in the breast, from which there was a daily discharge of from two to three ounces of pus. The sinuses could be traced behind the gland. Compressed sponge was immediately applied, and she was placed on extra diet, with eggs, porter, wine, and quinine ; the child was spoon-fed, except allowing it to nurse enough from the breast to prevent inflammation. May 10.—Pus discharges from but one opening. May 12.—Pus very small in amount. May 17.—Sponge discontinued ; breast indurated and of nearly its normal size ; blueness still marked around the edges of the wound. The breast was supported after this with the suspensory bandage ; the mother continued to nurse the child,

and still remains in the surgical wards, but there is no prospect of any further trouble; discharged June 17.

Case 12.—Caroline Davis, Irish, æt. 25 years, domestic, good constitution, temperate, was admitted June 15, with a mammary abscess, produced by not completely emptying the breast after the death of her child. The child died May 25, and was thirteen months old. The breasts "caked" June 1, and inflammation rapidly followed in the left one. The breast was poulticed and allowed to open spontaneously. When admitted, there were two openings just below and outside of the nipple, and the areolar tissue was in a sloughing state. These openings communicated with each other, and were cut so as to form a single one, and the slough was trimmed out. On examination, the gland itself was found to be involved, and the discharge of pus was from four to six ounces per diem. The sponge was applied in the usual manner, and patient was allowed extra diet.

June 16.—Discharge during the last twenty-four hours was nearly six ounces; sponge applied twice daily; complained of pain after the application of the sponge. The water with which the sponge was saturated was lukewarm.

June 17.—Discharge only one ounce and a half during the last twenty-four hours. June 18.—Same as yesterday. June 19.—Discharge one ounce. June 20.—No discharge. June 21.—No discharge. June 22.—Opening closed. June 25.—Patient discharged at her own request, still wearing the sponge, and no signs of further trouble.

Case 13.—Eliza Douglas, Irish, æt. 28 years, of good constitution. Seven years ago she was delivered of a dead child; did not become pregnant again till September, 1856. She was delivered with forceps, May 18. Amylene was administered in this case by Dr. George T. Elliot, but not producing the desired effect its administration was abandoned and the delivery completed while the patient was under the influence of chloroform. Patient attributes the inflammation of the breast to a draught of cold air to which she was exposed May 28. The right breast soon after became red, hot, and painful; leeches were freely applied, but the breast, the next day, was as much inflamed as before the application of the leeches. Ol. olivæ and tr. opii were freely applied till she was transferred to the surgical wards, for the purpose of having the compressed sponge applied to the breast before the abscess had gathered. June 9.—At this time there is no fluctuation. The patient has had no chills; the breast is about four times its normal size, and gives the appearance of deep-seated inflammation.

June 16.—Had a severe chill this evening. June 17.—Profuse perspiration last evening; the inner portion of the breast unusually painful. June 18.—Continues to have chills and perspiration; she was put upon treatment of quinine and dilute sulph. acid; she continued to have chills, and this was followed by a

profuse perspiration at night, until the breast was opened June 23, and three ounces of pus discharged, and a flax-seed poultice was applied. June 24.—Discharge three ounces; poultice continued. June 25.—Discharge three ounces and a-half; reapplied sponge. June 26.—Discharge half an ounce; breast somewhat more painful. June 28.—Discharge two ounces, and appears to be partly milk. June 29.—Discharge half an ounce; another superficial abscess, from which about three ounces of pus discharged. July 3.—There has been about half an ounce of pus discharged daily for the last three days; induration subsiding. July 6.—Very little discharge; just enough to soil the lint. July 8.—Discharge one drachm in twenty-four hours; induration mostly subsided. July 14.—Patient left the hospital; the induration had almost entirely disappeared; the breast was of its normal size; no pain in it and no prospect of further trouble.

Case 14.—Bridget Smith, New York, æt. 18 years, unmarried; was admitted May 9, 1857. This is the case which Prof. Clark relates, page 106, July No. New York *Journal of Medicine*, as metastatic abscess, following endo-metritis. The breast was opened June 9, and a pint of pus discharged. The abscess was of the third class, described by Velpeau, sub-mammary. The probe could be carried behind the gland, and the fluctuation was most distinct in the periphery of the breast.

June 10.—Discharge three ounces of pus; she still nurses the child from the other breast, though there is but very little milk in it; sponge applied to the breast to-day; complains of some slight pain after the application of the sponge, though the pressure was but moderate and tepid water was used to moisten the sponge. June 11.—Discharge one ounce; breast painful. June 12.—Discharge half an ounce. June 13.—Discharge one ounce and a half. June 15.—Discharge half an ounce. June 16.—Discharge from only one opening; the other closed.

The treatment was continued, the compressed sponge being daily renewed until July 7, when the discharge ceased.

July 20.—The induration has almost entirely disappeared; the breast is of its normal size. The patient still remains in the hospital under treatment.

NEW YORK HOSPITAL.

Case 1.—*Congenital Inguinal Hernia—Strangulated.*—Reported by George E. S. Keator, M.D., Resident-Surgeon to New York Hospital.

William W., æt. 24 years, laborer, who was admitted (Dr. Willard Parker's service) July 7, 1857, says that he has noticed his left testis to be somewhat larger than the other for some ten days past, but that he had suffered no inconvenience from it

whatever, till about nine hours before admission. While engaged in hoeing potatoes, he was suddenly seized with pain in his belly and testis, and, upon looking down, he discovered that his testicle had increased in size apparently very much. He immediately started for the city, and arrived at the hospital about eleven o'clock, P. M. Upon examination, a large tumor, about the size of a man's fist, was found in the scrotum, somewhat pear-shaped, of a tolerably firm consistence, and from which the testicle could not be fairly separated by the fingers. The cord also felt full and hard. He complained of pain in the tumor, extending up along the cord, and also of some pain across the abdomen. His body was considerably bent, and he could only with difficulty straighten himself. His pulse was rather feeble, below 100, surface natural, and there did not appear to be much constitutional disturbance. He had no vomiting, nor had there been any, according to his statement, since the first seizure. Many of the facts mentioned in his history were gathered some time after his admission, the account he gave at the time being very confused and contradictory, so that nothing satisfactory could be elicited.

Treatment.—The first impression was that he had a hernia, and with this view he was directed to cough while the hand firmly grasped the tumor, but no impulse whatever was communicated. He was then placed in a hot bath, and the same thing again attempted, and with a similar result. Efforts were also made to reduce the mass, but without effect. He was then ordered an anodyne and left for the night.

During the night and next morning he vomited, and continued to do so, at short intervals, during the day; the matter ejected being thin, without smell, and tinged with bile. Otherwise, he seemed better; had less pain; pulse still feeble; surface natural; no tympanitis. Ordered—a cathartic, and an anodyne at night.

July 9.—Expressed himself as feeling better to-day; slept tolerably during the night; vomiting less frequent. There is some heat about the tumor, and the scrotum is larger than it was yesterday. Had a movement from his bowels yesterday. This allayed our apprehensions of hernia, and hirud. med., No. ij, were directed to be applied to the scrotum, followed by a poultice. Pulse is still feeble, but rather fuller than yesterday; skin cool, but not clammy; takes his nourishment pretty well.

July 10.—Not much change; had a slight movement from his bowels yesterday; vomiting still continues. Continue treatment.

July 11.—Says he has less pain in the tumor and abdomen than at any time since admission; has no tympanitis. The tumor has increased in size, and upon examination, it imparts a sense of fluctuation, as if an abscess had formed, or there was a collection of blood in sac. An exploratory incision was accordingly made, and the tissues of scrotum as they were cut through, appeared œdematous. When the sac was opened, a quantity of dark, fetid

fluid escaped, and the first impression was that there had been a hæmatocele, and the blood had undergone partial decomposition. Upon introducing the finger, however, into the wound, a mass was felt, which when drawn out, proved to be omentum. The parts were then thoroughly cleansed, and the incision carried upward, and a little outward over the external abdominal ring, and upon laying open the sac more fully, it was found that, in addition to the omentum, about six inches of small intestine, had also escaped through the ring, the whole being lodged in the same sac with the testis. The greater portion of the omentum was gangrenous, as was also a knuckle of the intestine. The dead portion of omentum was removed, and the vessel ligated, and an opening made in the gangrenous gut. The parts were then left in situ, a suture placed in the lower portion of the wound to retain the testicle in place, the rest being left open and dressed with yeast. Ordered—pulv. opii, gr. ½ ext.; hyosciami gr. ji., every 4 hours. Pulse, at the close of the operation, very full. Ordered—brandy moderately and beef-tea.

July 12.—Patient rested pretty well during the night, and this morning his pulse is rather stronger, but still soft and feeble; frequency 108; skin cool; no tympanitis, but some tenderness of abdomen, for which a sinapism was applied; takes his beef-tea and brandy, and seems to relish it; has had no chill or vomiting since the operation. Continue treatment.

July 13.—Continued in much the same condition as at last note, till about ten o'clock last night, when he became very restless and delirious; pulse grew very feeble and more frequent, and he rapidly sunk, and, at about two o'clock, A.M., he died.

Autopsy, eight hours after death.—The gut proved to be jejunum, about two inches of which was gangrenous, and the much larger portion conjested; no peritonitis whatever; the external ring was freely divided; same constriction as the internal one, but not sufficient to produce any mischief.

Case 2.—*Rupture of the Liver.*—Wm. D., æt. 16 years, born in Ireland, by occupation a porter, was admitted to the service of Dr. Markoe, June 14, 1857. Just before admission, patient, while fishing at the dock, had his body squeezed between a log and the wharf, with very considerable violence, caused by the shock of a ferry boat. The log had pressed against his abdomen chiefly, and over the region of the liver. On admission, he was very much prostrated; pulse extremely feeble, and surface cool. No external marks of violence were perceptible anywhere on the body.

Treatment.—Ordered stimulants and artificial heat to surface.

June 15.—Patient rallied very considerably after the lapse of several hours, and this morning feels much better, pulse fuller, and surface natural; some tenderness over the region of liver, but not marked; breathing chiefly thoracic.

June 16.—The tenderness on the liver has increased, and there

is a slight degree of tympanitis. Ordered—Hirud. med. No. vi., to the seat of pain; to be followed by poultice.

June 18.—Pain and tenderness are very much relieved by the leeches, but the tympanitis has increased somewhat; breathing now decidedly thoracic; pulse soft, and about 96. Has had no movement from his bowels since admission. Ordered—Hyd. submur. gr. v., pulv. rhei. gr. vii. Takes an anodyne at night.

June 19.—Bowels fully moved; stool clay-colored; feels better.

June 22.—Yesterday patient felt so much better that he desired to get up and walk in the yard for a short time, which he did, and remained out several hours. After coming in, he felt very much fatigued, and had some pain in his abdomen, especially in the region of liver. He passed a restless night, and this morning an icteric hue appeared for the first time, most noticeable about the face and eyes. There is an increased amount of tympanitis; pulse still below 100, and soft; has had no chill. His urine is scanty and turbid, with bile, and his stools still clay-colored. Ordered—a blister over the liver, and also—℞ Calomel gr. pulv. opii ½ gr. every four hours.

June 26.—Since last note a considerable effusion of fluid has taken place within the cavity of abdomen, so much so as to embarrass his respiration somewhat. The jaundice has disappeared almost entirely; pulse still soft, and rather feeble; gums affected by the mercurial. Ordered—to continue it at longer intervals. Urine scanty and still turbid, with bile. Stools continue clay-colored.

June 29.—Effusion into abdominal cavity steadily increasing; other symptoms much the same. Stop calomel and opium, and substitute pulv. purgans. gr. xxxv., every six hours. Takes beef tea and good nourishment; appetite pretty good.

June 30.—Bowels freely moved; stools still dry-colored; urine as before. Ordered—in addition to pulv. purgans, a pill, composed of calomel, scille, and digitalis aa gr. j. Every four hours.

July 2.—Very little effect was produced on the kidneys by the diuretic pill, and the dropsy is increasing rapidly, so as to occasion very great discomfort and difficulty in breathing. Pressure on abdomen causes very little pain. Patient is emaciating very much, and has little or no appetite. Ordered—wine whey in addition to beef tea, etc.; also, acetat. potassæ ℈i, ter in die, instead of the pill. Pulse feeble, and about 100.

July 5.—The acetate of potash was found to disagree with his stomach, and the following prescription was substituted to-day.

℞	Rad. Apocynam. Canab.	℥ss
	Fol. Sennæ	℥i
	Bi-tart Potassæ,	℥ij
	Sem. Anisi,	℥ss
	Adde aqua bull.	Oi

Fiat. infusum.

Dose. A wine-glass fulto be taken three times a day.Since last note, his belly has become very much distended; his respiration short

and hurried; he is very restless, and obliged to take anodynes in considerable quantity to procure repose. Pulse more full, and about 105. Urine and stools as before. Has very little appetite, and has to be almost forced to eat. Ordered—to stop pulv. purgans.

July 7.—To-day his symptoms appeared so urgent, and he begged so earnestly for relief, that I was induced to tap him. Eleven quarts of fluid, resembling port wine in appearance, was removed, and the operation was followed by immediate relief; so much so, that in the evening, he said he felt perfectly well. Took his beef tea and wine with a relish, and desired some bread and tea.

July 8.—Slept well during the night, and says he is entirely free from pain; respiration easy and natural. Some accumulation has taken place since yesterday; pulse fuller, but still very feeble. Continue wine and good nourishment.

July 9.—Patient continued in about the same condition as at last note, till near ten o'clock last evening, when he suddenly began to sink, and this morning, about three o'clock, he died.

Autopsy, eight hours after death.—Cavity of abdomen contained a considerable amount of the same looking fluid that had been evacuated before death. The intestines are coated, and, with a thick layer of lymph, as was also the peritoneum covering the liver and diaphragm. The liver, on examination, revealed a fissure, about two inches long, and superficial, situated near the edges of the right lobe, and, also, a small opening passing nearly through the entire thickness of the same lobe, about an inch from its junction with the left. Lungs and other organs appeared normal.

PART SECOND,

CRITICAL ANALYSIS.

ART. VII.—1. *Yellow Fever, considered in its Historical, Pathological, Etiological, and Therapeutical Relations; including a Sketch of the Disease as it has occurred in Philadelphia, from* 1699 *to* 1854; *with an examination of the connections between it and the fevers known under the same name, in other parts of temperate, as well as in tropical, regions.* By R. LA ROCHE, M.D., Member of the American Philosophical Society; of the American Medical Association; Corresponding Member of the Imperial Academy of Medicine, etc., etc., etc. In two volumes, 8vo., pp. 615 and 813. Philadelphia: Blanchard & Lea, 1855.

2. *The Cause and Prevention of Yellow Fever, contained in the Report of the Sanitary Commission of New Orleans.* By E. H. BARTON, A.M., M.D., Chairman of the Sanitary Commission, etc., etc. Philadelphia: 1855.

3. *Some Account of the last Yellow Fever Epidemic of British Guiana.* By DANIEL BLAIR, M.D., Surgeon-General of British Guiana. Third Edition. London: 1852.

4. *Report on the First Eighteen Months of the Fourth Yellow Fever Epidemic of British Guiana.* By DANIEL BLAIR, M.D., Surgeon-General, etc. London: 1856.

5. *Report on the Fever at Boa Vista.* By J. O. MCWILLIAM, M.D., R.N. With the Parliamentary Documents relating thereto.

6. *Second Report on Quarantine. Yellow Fever.* Presented to both Houses of Parliament. London: 1852. 8vo, pp. 414.

7. *Remarks on the Yellow Fever which appeared of late years on the Coast of Brazil.* By WILLIAM MCKINLAY, M.D., R.N. 1852.

8. *Das Gelbe Fieber, nach dessen Geographischer Verbreitung, Ursachen, Verschleppbarkeit, Haupterscheinungen, Behandlung und anderen wissenschaftlichen Beziehungen.* Von DR. ROBERT C. B. A. LALLEMANT, Director des Hospicio de Nossa Senhora de Saude und Mitglied de Centralgesundheitsrathes für Brasilien in Rio de Janeiro, etc., etc. Breslau: 1857. 8vo, pp. 341.

9. *Report on the Origin of the Yellow Fever in Norfolk, durng the Summer of* 1855. Made to the City Councils by a Committee of Physicians. Richmond, Va.: 1857.

During the last decade of the preceding century, and in the early period of the present, the subject of yellow fever excited the liveliest interest among medical men and philanthropists, in all parts of the world. The fearful havoc caused by this pestilence among the British West Indian troops, the devastation which it visited upon all the large towns on and near the Atlantic seaboard, from New York and Philadelphia, to New Orleans and Vera Cruz; and the terrible and repeated sweep of its deadly power throughout the West Indies, and through the towns and cities of Andalusia, in Spain, and around the densely-populated Rock of Gibraltar—up the Mediterranean to Leghorn and Palma—aroused the spirit of active medical inquiry; while, in all the commercial towns, from London to Cadiz and the African stations, and from Boston to Charleston, Havana, and the Spanish Main, the inhabitants were agitated with fearful apprehensions of impending visitations from this deadly scourge, the origin and habitats of which were then, as now, subjects of anxious and vague conjecture.

The work of collecting and analyzing all the various records of these epidemics must have seemed a forbidding enterprise, if not an impossibility; and, yet, in the history of no other pestilential disease could such an effort prove of such practical importance. The great task has at last been accomplished by an American physician, whose long-established reputation will, by this monument to his genius, industry, and profound scholarship, be perpetuated while the nature and history of yellow fever continue to interest the medical profession.

We propose now to examine some of the rich fruits of Dr. La Roche's patient study and philosophic inquiry, particularly noticing some of the essential stadia of progress in the knowledge of yellow fever, and, finally, glancing at the leading facts and principles that seem established in the history of the principal outbreaks of this malady during the last few years; we will attempt to classify the facts already established, and will indicate the defects and difficulties which are met with in the investigation of the etiology and pathology of yellow fever, and note important points to be attained or corroborated.

The great work of Dr. La Roche was laid before us, nearly two years ago, and, as it must for ever remain the *first*, and, probably, for many years, the most complete, as it ever will be one of the most philosophical and practical, of treatises on the subject of yellow fever, we may very properly, at the present time, solicit the attention of medical readers to the treasures which this indefatigable author has garnered in his portly and elegant volumes, while we examine a few of the great practical questions therein discussed.

Those of our readers who have not yet enriched their libraries with Dr. La Roche's volumes might wish to have presented to them a brief synopsis of the work; but it will be found impossible to condense, and yet do justice to any class of the facts, arguments, and deductions, which are therein embodied. The treatise itself is the result of a thorough condensation of its distinguished author's elaborate researches, and each of its sixty-seven well-filled chapters is a continuous and thoroughly-wrought argument, and each of its fourteen hundred pages is closely set with an inseparable series of facts. The work possesses a remarkable completeness in every respect. No truer description of it can be given than that recently rendered by the graceful pen that edited the last edition of "Bartlett on Fevers:"—"The spirit and potencies of all the nine hundred and eighty-five treatises of the author's bibliography seem to have been distilled over, and condensed in, this capacious alembic. The book is an encyclopædia, a library. There is no branch of his subject that the learned author has not investigated profoundly. A prominent object is to show that epidemics of yellow fever are always of domestic origin. This, indeed, is the bass note that runs through all the airs and variations of his great theme."—(*Prof. A. Clark, in op. cit., p.* 593.) Fortunately for the value of the work, and for the merit of its accomplished author, this "bass note" has not been permitted to disturb the harmonies of truth, nor mar the melodic symphonies of faithfully interpreted facts. Dr. La Roche is an earnest lover of scientific truth, and all his labors bear testimony to his untiring industry and faithfulness in seeking its richest treasures, and in discovering their applicability for the benefit of humanity. In his recent treatise on malaria, as well as in his numerous medical papers, he has exhibited the spirit of a philosophic inquirer, and has given to us the productions of a master.

Fortunately for Dr. La Roche, and for the interests of medical truth, he has undertaken the investigation of this important subject, at the close of a period which had not only given origin to a complete and widely varied series of events in the etiological history of yellow fever, but had also produced a very prolific number and variety of records of the same, both historical and pathological; and this work has been accomplished while the recollections and the records of the events were yet sufficiently recent to allow of any requisite verifications of diverse or conflicting statements, and after had passed away the heat and prejudices of the polemical controversies which a theoretical era in medical philosophy had engendered on all questions relating to the etiology of this dreaded malady.

The time had arrived when medical readers in our own country, and throughout the world, called for, and greatly needed, a carefully prepared and thorough *résumé* and analysis of the vast and heterogeneous mass of materials which had accumulated in various countries, and in diverse languages, respecting this strange pesti-

lence that, during the period of nearly three quarters of a century, had been known to the medical profession, and attentively studied by widely separated observers of its various epidemics. These *disjecta membra* have now, for the first time, been made to take the form, and constitute the substance, of a complete and strictly scientific history of the malady.

Though the work involved the necessity of most laborious and erudite research, for which, perhaps, no other man living possessed the requisite resources, Dr. La Roche has rendered to himself and to his theme the justice to discuss every question with fairness, and without a trace of dogmatism,—writing with great perspicuity and simplicity ; giving to every author, and to every fact, all that credit and weight which their inherent claims could justly award. Chisholm and Chervin ; Pym and Bancroft ; Fellowes, Hosack, and Townsend ; with Rush, Devéze, and Blair, and every one of the nine hundred and eighty-five acknowledged authorities to whom he refers, and from whom he quotes, are treated with that dignified respect and candor which should always characterize philosophical and scientific inquiries.

For our own part, we confess to a hearty admiration of the style and spirit of the great contributions that have been made to the medical literature of the age, by American physicians. In their respective departments, the labors of La Roche, Drake, Dickson, Flint, Bartlett, and Gross, have gained the highest appreciation throughout the medical world, and their works breathe the noble and cosmopolitan spirit of a profession that recognizes no partisan divisions, and of a science that knows no polemical strifes.

Though many a lance may yet be broken between conflicting theorists, on the questions relating to the origin and the communicability of yellow fever, and though Dr. La Roche's personal views on this subject may yet be proven untenable, we confidently believe that, with no less frankness, and with a sounder philosophy than that which characterized the excellent Dr. Rush's change of opinion on this subject, our distinguished author will be among the first to explain the nature of the error that he had previously maintained with masterly strength.

Philosophers make use of hypotheses and theories only as *scaffolding* to facilitate in the work of constructing the great temple of scientific truth ; and very imperfectly and loosely stored, must be the knowledge possessed by any physician who has not carefully made use of these exterior fixtures and aids in scientific research.

But it is not for us to sit in judgment on the opinions of the learned author of the treatise before us, it is sufficient that he has presented a very complete statement of the facts upon which all the various conflicting theories, and the various modes of treatment, have been founded.

Proceeding to the examination of some of the details embodied in this treatise, we remark, that the first one hundred and twelve

pages are devoted to the history of yellow fever, as it has prevailed in Philadelphia, embracing an admirable sketch of the medical topography of that city, and a full record of the fourteen epidemic visitations of this fearful malady there. The balance of the first volume is devoted solely to the "Medical History of Yellow Fever."

The author remarks, that "the fever of Philadelphia, is used in what follows as a kind of foundation to a full consideration of the disease, as observed in different places, at home and abroad, where it has occurred as a central point, toward which facts connected with the fever, as manifested elsewhere, converge ; in other words, to use a homely expression, as a hook upon which to hang a dissertation on yellow fever generally—its symptoms, its anatomical characters, its pathology, its treatment, its etiology, and the laws by which it is governed." And most admirably has that local history been made to serve its purpose in the general treatise.

The following remarks are made under the head of the altitudinal and geographical ranges of yellow fever :—"As a general rule, the disease may be regarded as one of low, flat, and level localities, and as appertaining more especially to hot latitudes. * * * It differs in respect to its altitudinal and geographical limits, from diseases characterized by contagious properties. * * * The former, whether febrile or otherwise are uninfluenced by any degree of elevation above the level of the sea, to which they may happen to be carried. Not so, however, diseases arising from, or connected in some way or another with, malarial exhalations ; for they are found to lessen, in point of prevalence, as we ascend to a considerable distance, and cease to prevail, however favorable the locality may be to the formation of the poison to which they are due, when we reach a certain degree of elevation."

In the examination of certain questions relating to the etiology of yellow fever, we shall have occasion to refer to the facts contained in the foregoing question, and, likewise, to the following remarks, which close the first chapter :—"The yellow fever being a disease of hot weather, requiring a high average temperature during the summer months, and manifesting itself in no climate where the temperature is below that average, it is governed in great measure, in regard to its outbreak, duration, and termination, by that condition of atmosphere. It thence follows, that it usually commences earlier in Southern latitudes, inasmuch as the thermometer reaches there the requisite average, sooner than in the Northern sections of the zone. But as we proceed, facts will be adduced which show that the disease has not unfrequently appeared later in Southern latitudes, than it usually appears with us—that as far north as this city, it has broken out nearly as soon as it does usually in the West Indies ; and that, so far from being always a disease of sixty or ninety days, and terminating in hot latitudes, when, not only with us, but even in New Orleans, it is at its maximum, it often, not only continues its epidemic career in

those latitudes, long beyond the limits thus assigned to it, but is even prolonged with but little abatement during one or several years."

The author's opening remarks on the subject of classification of yellow fever, are strikingly illustrative of the systematic clearness of style and thought that characterizes the whole treatise. "The disease which forms the subject of our present inquiries, does not vary either in regard to its pathology, or its pathognomonic phenomena, in whatever region, or at whatever period, in the same place, it may show itself, sporadically or in an epidemic form. But, although fundamentally and identically the same in these particulars, under the various circumstances mentioned, the yellow fever, like many other diseases, assumes in different places, at different periods, and often in the same place during the same season, diversified aspects, or characteristic distinctions, proceeding, not from any specific difference of nature, but from various degrees of reaction; from a tendency to depression in the vital force; from the preponderance of certain symptoms, appertaining or not to the disease, and varying according to the greater or fewer number of vital organs involved in the derangement of the body, or from other causes, the whole depending on peculiarity of constitution, temperament, habits, or conditions of health of those attacked; on a difference of intensity in the morbific agent, and on numerous contingencies resulting from the nature of the localities affected, the degree of temperature, humidity, and other phenomena in the surrounding elements. * * * From this, it follows that, in the examination of the disease, we notice not one concatenation of phenomena always invariably the same in every case, and succeeding each other as the patient progresses toward health or death in regular order; but a variety of groups of symptoms, which, though linked together by certain phenomena, which, being pathognomonic of the disease, approximating to each other in several other respects, afford very strong evidence of their being all members of the same family—are yet sufficiently distinct in their general outline and their mode of progression, to justify their being made the subject of separate consideration. Certain of those groups of symptoms, or varieties of the same disease, prevail more generally in some regions than in others; they are also more frequently encountered in some seasons than in others, in the same place; and while in some epidemics, several, or all of the varieties are intermingled among the different individuals attacked, in others, the fever assumes much the same character in the majority of those affected. * * * In some, the fever presents itself with marks of inflammatory action, of greater or less intensity; in others, that action is almost or totally absent. In some the pathognomonic symptoms are combined with an element of malignancy and putridity, which imports a totally different aspect of the disease. In a different set this element is absent, and replaced by one of a nervous character. In some instances, phenom-

ena, not characteristic or pathognomonic of the disease, and depending on accidental complications, assume the preponderance, and thereby impart still greater differences in the features of the case."

Obviously true, and vitally important, as are the foregoing concisely expressed doctrines relating to the grand outlines in the natural history of yellow fever, we find everywhere in the records of the malady, that these great practical facts and principles have been very frequently overlooked; hence, much of the obscurity and contrariety in the statements of various observers of this fever and its germain cognates. Let physicians study and record their observations of yellow fever in accordance with these well-established outlines and landmarks, and we shall seldom hear of the identity of the ordinary malarial fevers with this tropic scourge, which possesses as strong specific characteristics as small-pox, or the plague.

As regards the matter of special classification, Dr. La Roche remarks, that "for every purpose of description, the division adopted by Dr. Wilson appears the best; enabling us, as it does, to include with sufficient accuracy, the various cases, however dissimilar in appearance, which fall under the cognizance of the physician. In its grand outline," he says, "the division of all cases into the inflammatory, or those characterized by well-marked reaction and the congestion, in which this reaction is but faint or totally absent, is founded in nature."

Dr. Wilson (JOHN WILSON; *Memoirs of West Indian Fever; The Gibraltar Epidemic, etc.,*) subdivides the inflammatory form of yellow fever into three grades, viz., mild, violent, intense; while he classifies the congestive forms in like manner, into the slight, the aggravated, the apoplectic. To these, we should certainly add one important class, which Dr. Wilson doubtless includes in his first division of the congestive class, viz., that numerous class of cases seen in every epidemic of the fever, and by Dr. Barton very properly denominated the *simple* cases, and which comprises the greater portion of Dr. Pym's class of mild and ephemeral cases.

The chapters devoted to the semiology of the fever, are as complete as could be desired, and to one familiar with the malady, they seem a perfect transcript of what experience has taught; thus demonstrating the faithfulness of our author's descriptions, and the completeness of his studies and observations. In the two hundred and eighty pages devoted to this topic, and the separate phenomena of the fever, the subject is fairly exhausted, as he calls up the recorded observations of all the best authorities, and marshaling them in natural order, he evokes from their united testimony their own pathological interpretation.

We will only refer to some of the statements made, respecting one of the most striking, though latest, of the objective phenomena, viz., black vomit; and in the author's remarks on this topic, we have well illustrated the definiteness of his deductions from

the sixty pages of clinical and chemico-pathological facts given on this one subject, in the treatise.

"The peculiar characters, and particularly the dark hue of the black vomit, may, and probably does, as well as its manifest disposition to exude from the capillary vessels, depend in some measure, on the diseased condition of the blood, prior to its mixture with the acid fluids of the stomach, or to its undergoing, while in the circulation, the modifying action of such acids. That this is the case, has been surmised by competent authorities, and may be inferred from the fact that, at the period when the black vomit usually sets in, the blood is, in most cases, of a dark color, and has lost a large share of its adhesive and coagulable properties; and that clinical experience and physiological experience have shown that, when in that diseased condition, either from the agency of ordinary and powerful morbid and acrid poisons, or from the artificial introduction into the circulation of putrid substances, the blood manifests an equal disposition to exude from the same parts, and exhibits often many peculiar characteristics of the black vomit. Well-founded, however, as this explanation may appear, it can not be concealed that it is not applicable to all cases; for we not unusually find genuine black vomit occurring contemporaneously with the effusion of florid and coagulable blood from the nostrils, or other parts; a circumstance it would be impossible to account for, were an alteration of the circulating fluid essentially requisite to enable the latter to furnish materials toward the formation of the black vomit, and to impart to that fluid the disposition to escape from the capillaries. But such cases are comparatively rare. Most generally, black vomit is associated with altered blood, and the occurrence of the aforementioned cases will be found due to the early formation of acid fluid in the stomach or bowels, and the consequent transformation in those organs or their capillaries of the blood therein contained, into genuine black vomit, while the rest of the circulation remains unimpaired, or nearly so."

"It has been supposed that the discharge of the black vomit from the stomach, like that of the same matter, of ordinary blood from other outlets in the yellow fever, is always the result of a morbid process of an active kind; there is little doubt that this view of the subject receives support from the fact that the effusion of the fluid is often preceded by an inflammatory irritation of the surface whence it proceeds, or by a greater or less inflammatory excitement of the system at large, both of which appear incompatible with the existence of an atonic state of the capillaries. Nor is it less certain that a fluid, exactly resembling black vomit is, as we have seen, found in cases of poisoning or external injuries, under the direct influence of active inflammation: and that, in some of these cases, recovery occurs, convalescence is rapid, and the patient is restored to health without having had recourse to tonics and stimulants, or any means calculated to correct the atony of the vessels. But the occurrence of such cases only proves that

the effusion of a substance like black vomit may take place under the influence of an active state of the capillary vessels, but not that it never occurs under the influence of a contrary condition of the same vessels. With these facts before us, we can not admit that when, in the yellow fever, the black vomit occurs, the hæmorrhage must be viewed as of an active kind. So far from this, the circumstances under which the discharge takes place in that disease, its connection with other symptoms which portray an atonic state of the system; its analogy to other hæmorrhages, undoubtedly of a passive kind, must lead to an opposite conclusion. The effusion of black vomit, as well as the discharge of blood from other surfaces, takes place generally at a period of the disease when the powers of the system are exhausted, and all its vital energies are in abeyance, and when all irritation or inflammation, if it existed before, has subsided. In many cases, the existence of such inflammation, prior to the effusion, is problematical. The discharge is attended with passive exudation of a similar fluid, or altered blood, under the cuticle; it is accompanied with symptoms indicative of prostration and atony of the sanguiferous and other organic systems; it is preceded and attended by other hæmorrhages, the sources of which are visible to the eye, and in regard to the passive nature of which there can be no mistake; while, in some instances, the exhalation and discharge of the fluid continues after death, when all conditions of activity had, of course, subsided; and the limited number of cases that recover, after the accession of the black vomit, do so generally under the influence of means calculated to restore tone to the capillaries, and to impart strength to the system at large. From all this, we may perceive the propriety of coinciding with those who regard the effusion as connected with a relaxed condition of the vessels on the surface whence it proceeds."

"The black vomit being recognized to be blood, acted upon by the acid contents of the stomach, we have no difficulty in perceiving that much of the difference it presents, in regard to its physical appearance, will depend on the manner in which the blood is effused into the stomach—whether drop by drop, or in a stream—and on the degree of acidity of the gastric secretion, or the quantity of serous fluid it meets in that organ. It has been found, for example, that whenever blood is exhaled therein in a quantity proportionate to these secretions, it exhibits a black color, while the aqueous portion is limpid or clear green. If there be a slight excess of blood—more than enough to neutralize the acid—instead of black, we have a nut-brown, a chocolate, or reddish matter, and the watery portion, when filtered, is of a rum, brandy, or red color. If the hæmorrhage be great, the fluid presents all the characteristic marks of blood, either with or without admixture of black vomit."

We will extend these quotations by selecting the following, respecting the black, tar-like, and "coffee-ground" stools in yellow

fever:—"While such is the appearance and the nature of the black matter ejected from, and found in, the stomach, the intestines give passage, as we have seen, to substances which bear a strong resemblance to the former, and are, to all intents and purposes, analogous to, or identical with, it. * * * * That the black matter found in, or voided from, the intestines, is sometimes—we may even say often—of gastric origin, there can be no reason to doubt; for whenever the matter is limited to a part of the intestines, it is found only in the jejunum. But however true this may be, however reasonable or proper the admission may be regarded, and whatever may be the degree of reliance placed on the accuracy of the signs by which that origin may be inferred, we must not explain in that way all the cases of alvine discharges of black, coffee-ground, or dark sanguineous matter which occur in that disease; for there are facts enough to show, beyond the possibility of denial, that such dejections are referable, in the greater number of cases, to morbid processes, located in the intestines themselves and their dependent organs." * * * *

"Black matter, having all the ordinary characters of black vomit, has been often found in the large and small intestines in subjects whose stomachs contained none. * * * * The black matter sometimes comes in form of figured stools composed entirely of it, and made into form and consistence merely by a small quantity of intestinal mucus. * * * Nothing of the kind is found in the stomach. * * * Nor must we forget that, if black vomit often precedes the ejection of black stools, the contrary is not unfrequently the case; the matter being evacuated from the bowels before it is ejected from the stomach. Moreover, the tar-like, or coffee-ground matter has been found, after death, oozing from the vessels on the surface of the bilious coat of the intestines and other abdominal organs; or, it has been pressed out from congested portions of the intestinal membrane. Again, when black matter is voided per anum, the patient stands a better chance of recovery than when it is discharged by the stomach; a result which would scarcely obtain were it found in the latter organ. * * * * In conclusion, it may be remarked that the appearance of black, coffee-ground stools toward the fourth day, can not prove the gastric source of the effusion, as it is about this period that the hæmorrhagic tendency is established; and lastly, that nothing can be made out of the absence of signs of intestinal inflammation, or congestion, inasmuch as the effusion is the result of a passive or relaxed condition of the vessels, and black vomit is perfectly compatible with a state of integrity of the mucous membrane."

The foregoing statements, respecting the black vomit, present a fair *exposé* of the leading facts immediately connected with the pathology of that class of phenomena. Our own experience and investigations correspond very exactly with these conclusions of Dr. La Roche. And we will here mention the fact that, in the

treatment of upward of two hundred cases of yellow fever at the New York Quarantine Hospital, and in the study of nearly three hundred other cases, the black vomit and its attendant phenomena, the hæmorrhages, and the black sanguineous alvine dejections, were observed to comport with the descriptions given by this author.

In our own cases, but one death occurred without black vomit, either exhibited during life, or found abundantly in the stomach after death ; and in the exceptional case, the fever of a severe type and protracted to the sixteenth day without vomiting, the ileum, cæcum, and colon contained an abundance of black sanguineous material ; the mucous membrane of the stomach was seen to be in a perfectly normal condition, while that of the portion of intestinal canal containing the black material, was markedly relaxed, mammillated, and ecchymosed. Again, of six cases that recovered from black sanguineous vomiting under our care, a supporting treatment, viz., champagne, porter, serpentaria, quinia in small and very frequently repeated potions, either by the mouth or by injection per rectum, constituted the remedial agencies ; as in each of these cases this tonic and stimulating course of treatment was indicated by the general condition of the patient. We should remark, that the quinia in these cases was administered by injection in the bowels only, while the vomiting continued, as was also occasionally the porter and the serpentaria. Ice, in a state of minute division, was continually allowed all the patients suffering from black vomit, or from gastric irritation.

We have regarded the sanguineous, black, or coffee-ground discharges from the intestines as being of less grave import than the ejection of similar material from the stomach, mainly, from the fact, that a supporting treatment being the *conditio sine qua non* of cure at that stage of the malady, and as we usually can, in those cases unattended with vomiting, rely upon the effect of ingesta by the stomach, the administration of remedial agents is not interfered with. In a large proportion of cases in which we have seen both black vomit and black sanguineous dejections, in the same individual, the latter phenomena has preceded the former by many hours.

In one of the last fatal cases we have witnessed, this order of precedence was observed by the space of two days, when the vomiting of slightly altered alkaline blood commenced, and like the other hæmorrhages continued to increase until the death of the patient on the fifteenth day, and five days subsequently to the commencement of vomiting. While the vomiting exhibited the blood from the stomach but slightly altered in appearance, and with an alkaline reaction, the dejections from the bowels presented a greater quantity of blood, and that in a condition nearly resembling the genuine black vomit.

The frequent occurrence of cases in which hæmorrhages from the stomach, intestines, and various tissues, precede, as well as ac-

company black vomit; the acid reactions of the black material, whether from the stomach or the intestines, while red blood is invariably alkaline; the almost invariable occurrence of a precursory white vomiting of a highly acid gastric fluid, without blood; the ready transformation of blood into a material closely resembling the black vomit, by slowly mixing red blood with mucus and dilute hydrochloric acid; and, finally, the chemical analysis and the microscopical characteristics of the materials in question, fully establish the fact which was boldly asserted by the venerable Sir Wm. Pym, more than forty years ago, that black vomit is blood modified by an acid.

Several chapters of the treatise are devoted to the investigation of the various objective and pathological symptoms and phenomena, the researches being remarkably complete and philosophical. We will only quote a few paragraphs respecting pain. Speaking of pain in the head, the author remarks :—

"As may be perceived, the headache of yellow fever differs from that occurring in bilious remittents and other febrile diseases; for in these, the pain more frequently occupies the upper and back parts of the head, and those parts are almost always more or less affected when the forehead suffers. We, moreover, but seldom observe in the latter disease, that circumscribed torturing pain in the globes or sockets of the eyes, or adjacent parts; while, on the other hand, the pain felt is more frequently attended with a sense of fulness and symptoms of cerebral congestion and irritation. * * The pain in the head (in yellow fever), comes on with the accession of the first stage of the disease. It continues during the whole of that stage, gradually diminishes after the second day, and disappears more or less completely at the period of remission, or about the third or fourth day." He truly observes, that the pain so often complained of in the loins, appears to be neuralgic, and quite distinct from the pains incident to any of the accidental inflammatory complications of the fever; and respecting gastric tenderness and pain in the stomach and bowels, he gives the following reasons for concluding that it is not always due to inflammation :—1. "It has been known to be intense, where, after death, very trifling or no lesions, resulting from previous inflammations, have been discovered. 2. In some cases, in which evidences of inflammation were incontrovertible, and were discovered after death, the tenderness in question failed to present itself, or existed in a very limited degree. 3. It is not experienced, or is so very feebly, in other acute diseases, in which the mucous membrane of the stomach is inflamed to greater extent. 4. The pain does not resemble that experienced in ordinary gastro-enteritic inflammation, but has been compared to that produced by pressure in peritonitis, a form of disease which does not exist in yellow fever."

The characteristic pains of yellow fever seem to sustain no relation whatever to the leading pathological events and the anatomical lesions; but, on the other hand, these pains fully correspond

with the functional abnormities of the nervous system and the sensorium, as otherwise manifested than by pain. Often have we witnessed cases of yellow fever in which, *without pain*, there was an intensity of suffering from a peculiar *malaise*, more terrific than any pains—the unhappy patient pleading for, aye, demanding, immediate death by any torture, in its stead.

The chapters devoted to the pathological anatomy and the anatomical characteristics of the fever, present a very complete digest of the facts thus far elicited on this subject. We have only space to refer to the subject of *fatty degeneration of the liver*, first described by Prof. A. Clark, of New York, in the autumn of 1852, from careful microscopical examinations, some of which were made in the presence of Dr. La Roche.

From the first microscopical investigation of a single case, Prof. Clark said at the time, "I will not assume that a single case can demonstrate a general fact, but will propose the question for solution by our Southern brethren :—Is not the change so constantly observed in the liver of those dying of yellow fever, *acute fatty degeneration?*"—(Vide N. Y. *Med. Times*, May, 1853.)

Dr. La Roche's attention being thus specially drawn to this point, he pursued the inquiry, as he had ample opportunity, among his brethren in Philadelphia, Prof. Leidy and Dr. T. H. Bache, being the microscopists. The results were remarkably uniform.

"Scarcely a few months had elapsed, when we had in this city the fullest opportunity of confirming the discovery of our very distinguished and accomplished countryman ; for in all the examinations made during the epidemic of 1853, the peculiar change in the liver to which he called attention, was discovered. * * * In the summer of the next year, 1854, the livers of those who died with the disease, * * * were in like manner examined under the microscope, and *in every instance, without a single exception*, in both seasons, the results were exactly the same. The number of livers examined was too large ; the results obtained were too constantly the same to allow these to be ascribed to mere coincidence. The changes observed, must appertain to the disease, and as they are not noticed in the livers of individuals who have died of other fevers, they must be placed among the anatomical characteristics of yellow fever."

The coincidence of Dr. Budd's confirmatory suggestions on this subject, as noted in the last edition of his *Treatise on Diseases of the Liver*, and the remarks of that masterly observer, Dr. Daniel Blair, of Demerara, during the last yellow fever epidemic (of 1853–4) in that colony, and who at that time knew nothing of the investigations made by the aforementioned gentlemen, tend strongly to corroborate the correctness of the opinion just quoted from Dr. La Roche. Dr. Blair writes :—"Now, this yellow condition of the *enlarged* liver is not yet satisfactorily understood. It is, no doubt, true, that the liver is found sometimes dry and anæmic from having been drained by hæmorrhage, or vital or

physical determination to some neighboring viscus; and then the capsule of Glisson, tinged by the bile, communicates the ochre, or straw, or cream color to the whole mass; but when enlargement also is present, with or without anæmia, the explanation is not sufficient. Of what does this yellow ochre enlargement consist? This point has not yet received sufficient attention. But I have found that, in these cases, a small portion of the parenchyma scraped off, and submitted to the microscope, showed an abundance of oil globules." *

It is interesting to note that, in his investigations of the pathological anatomy of yellow fever at Gibraltar, in the year 1828, M. Louis, in recording his observations respecting the abnormal changes in the color and consistence of the liver, proceeds to remark that, "this appearance reminded us at first of the greasy transformation of the liver."—(Vide Louis' *Researches*, etc., by Dr. Shattuck, p. 119.) †

We think that the experience of those who have seen most of yellow fever, fully confirms the observation of M. Louis respecting the uniformity of this singular lesion of the liver, as witnessed by him at Gibraltar. Louis writes:—"But the most remarkable fact is, that the liver is the only organ constantly and more or less uniformly altered in the subjects who have died of the yellow fever at Gibraltar, and whom we have opened. Nor is this alteration found in subjects dying of other diseases, so that we must necessarily consider it the anatomical character of the yellow fever. This character is so much the more worthy of our attention, since, in cases where no black matter was found in the stomach and intestines, there were no other means of distinguishing the bodies from those of individuals who have died of other acute diseases." And he very justly and forcibly adds:—"How important is this character to any one who is called upon to study an epidemic at its commencement, or to answer the question—'Is the yellow fever ever sporadic at Gibraltar?'"

Now, although it may be prudent to consider this fatty degeneration of the liver as a mere accident in the course of certain invariable pathological events, and depending, as Dr. Clark has sug

* The fatty degeneration of the liver in yellow fever is not necessarily attended by an enlargement of that viscus, and in our own observations on this point, the fatty change has been found in the small and anæmic livers of protracted cases of yellow fever, no less frequently than in those which were increased in size. As this is necessarily an acute fatty degeneration, in which there is not time for much actual hypertrophy of the organ, by the increment of oily deposit, we might from that circumstance infer, what is found to be true, we think, that the enlargement in question depends upon vascular engorgement.

† At the very verge of this important pathological discovery, as was M. Louis', at that moment (thirty years ago), his great mind was prevented from grasping the ultimate fact in the case only by the hasty and erroneous opinion he then entertained and expressed, that such transformation must be impossible, inasmuch as "the greasy transformation," as he remarks, "is always accompanied by a softening."

gested, upon an hyperæmic state of that viscus in yellow fever, we may hope that this simple and easily observed abnormity, which is thus associated with the more strikingly pathognomonic anatomical changes in this malady, will lead to very important practical results. Certainly, if it even fails to afford us the thread by which we may unravel the mysterious processes of the fatal disease, it may still enable observers to settle all doubts respecting the specific character of the much-talked-of "sporadic cases," when fatal, as well as help to determine the nature of doubtful and mixed epidemics when the yellow fever is suspected.

So far as the writer's personal observations have extended, they coincide very fully with the facts recorded on this subject by Prof. Clark and Dr. La Roche. We would here state that, thus far, we have found the liver obviously fatty, by the usual tests on section, only in the cases in which the fever had been protracted beyond the fourth day—the degree of fatty change bearing a very exact ratio to the degree of intensity of the congestive type and the period of protraction of the malady.

Passing over the subject of "Critical Days," we have only space for a few brief quotations respecting the type of yellow fever.

"Yellow fever may therefore, strictly speaking, be viewed as a disease of a single regular paroxysm. Nothing bearing any analogy to such a paroxysm recurs after the cessation of the period of calm in question. Febrile excitement may, and doubtless does, sometimes occur; but, I repeat, after the accession of the metaptosis, fever, as a distinct feature of the disease, ceases; and we may argue with those who affirm that what has been taken for a return of the paroxysm after the remission is, as many good observers have long before remarked, an invasion of fever of uncertain type, varying according to the nature of the injuries inflicted. It must be viewed in the light of a fever of irritation—the effect of some complicating ailment—which may or may not exist without impairing, by its presence or absence, the purity of the disease of which it does not constitute an integral part." * * * * * "Undoubted as the fact may, from the testimony adduced, appear, that the yellow fever assumes, occasionally at least, the remittent, and even, but more rarely, the intermittent type, not in this city only, but wherever the disease has shown itself; and however prepared we may be, from personal observation, to join in the statement, there can be no doubt that cases of the sort are not as frequently encountered as might be inferred from what precedes. So far from it, experience shows that, in the large majority of instances—especially those of a severe character—the fever takes on at once, and preserves, the continued type; or, if it presents occasional risings and fallings, these modifications are not sufficiently well marked to deserve the appellations of remissions, and still less of intermissions. * * * So far as the many cases that have fallen under my own personal observation are concerned, the *one* paroxysm was certainly continuous. In no in-

stance, when the disease was pure, could any remission, properly speaking, be detected."

The author further states: "It will be seen, on inquiry, that the remission pointed out by several writers, in illustration of the periodic character of the disease, consists in that cessation of febrile excitement which constitutes the metaptosis upon which I have dwelt; while others have evidently in view those momentary sensations of ease and amendment which manifest themselves at times in this and other truly continued febrile complaints, and may properly be regarded as differing from true remissions, unaccompanied, as they often are, by changes in the skin, pulse, etc." And of the actual intercurrence of an extra series of febrile phenomena, he adds:—"It must be referred, not to a tendency to remit inherent in the disease, but to a complication of the yellow fever with some one of the febrile affections of which that tendency constitutes a characteristic element. That the two diseases may prevail at the same time, in the same place, and also coexist in the system, are facts too evident to be denied."

In the chapter on the Complications of Yellow Fever, the author enters fully into the discussion of all the facts and arguments on this subject; but we have not space for further quotations.

The practical bearings of this question are of vast importance, no less to the sufferers from yellow fever than to the public welfare. From our own Rush and Miller, and from Arejula and Bancroft, down to observers of the present day, there have appeared able advocates of some modification of the doctrine of the identity and common origin of yellow fever and the ordinary malarious affections. Hence, we have fabulous accounts of the outbreak of yellow fever, in various rural districts most distant from the seaboard, from the malarious settlements at Galliopolis in the wilds of Ohio, and from the distant station of Fort Smith in the Ozark mountains, to the marshes of Onondaga, and on vessels at sea—where a surgeon of the United States Navy recently witnessed a sweeping epidemic of what he describes as yellow fever—but from which not a single death occurred among the hundreds that sickened.

Omitting further reference in this place to the very interesting chapters which comprise the remaining part of Dr. La Roche's first volume, in which, with a complete digest of all that need be recorded on the subjects of the Duration, Convalescence, and Relapse, the Prognosis, Incubation, Statistics of Mortality, with the Pathology and Diagnosis, (chapters replete with matter of the greatest interest,) the author completes his Medical History of the Fever, we will now proceed to the second volume, opening with the etiology of the malady. In this connection we will examine and compare essential points in the records embodied in the several monographs, essays, etc., noticed at the head of this article.

(To be continued.)

BIBLIOGRAPHICAL NOTICES.

ART. VIII.—*Manual of Physiology.* By WILLIAM LENHOUSE KIRKES, M.D. A new and revised American, from the last London edition, with two hundred illustrations. Philadelphia: Blanchard & Lea, 1857. 8vo, pp. 584.

THIS manual has entirely fulfilled the object of the author, viz.: to furnish in a convenient form for students engaged in attendance upon lectures and preparing for examination, the genera y admitted principles of Physiology. It contains, in a condensed and compact form, all the principle facts on the various subjects treated by lecturers on this branch, and may be relied upon as the best authority.

ART. IX.—*Principles of Medicine.—An Elementary View of the Causes, Nature, Treatment, Diagnosis, and Prognosis of Disease. With brief remarks on Hygienics; or, the Preservation of Health.* By CHARLES J. B. WILLIAMS, M.D., F.R.S. A new American, from the third and revised London edition. Philadelphia: Blanchard & Lea, 1857. 8vo, pp. 486.

WE are gratified to be able to announce the appearance of a new edition of this popular, and most valuable work. It evinces an increasing interest in our profession, in the study of the principles of rational medicine.

ART. X.—*On the Diseases, Injuries, and Malformations of the Rectum and Anus, with Remarks, on Habitual Constipation.* By T. J. ASHTON, Surgeon to the Blenheim Dispensary, etc., etc. Second edition. London: John Churchill, New Burlington street, 1857. pp. 396.

IN a critical notice of the first edition of this work in our review department, an opinion was expressed, highly favorable as to its general character and merits. The early appearance of a second edition, confirms the estimate then placed upon its value, and proves its acceptance with the profession. The present edition, though not materially changed, is rendered more useful by the addition of illustrative cases, and the extension of several sections.

ART. XI.—*Human Physiology.* By ROBLEY DUNGLISON, M.D., LL.D. With five hundred and thirty-two illustrations. Eighth edition, revised, modified, and enlarged. In two volumes. Philadelphia: Blanchard & Lea, 1856. 8vo, pp. 729 and 755.

THIS edition of Dr. Dunglison's Human Physiology, has undergone a careful revision, each chapter being reviewed and modified, according to the present state of physiological science. The work is, therefore, still more worthy of the liberal patronage of the profession, which has been so liberally bestowed upon former editions.

ART. XII.—*On the Diseases of Infants and Children.* By FLEETWOOD CHURCHILL, M.D., M.R.I.A. Second American edition, enlarged and revised by the author. Edited, with additions, by WM. V. KEATING, M.D., A.M. Philadelphia: Blanchard & Lea, 1856. pp. 735.

On the Diseases of Women; including those of Pregnancy and Childbed. By FLEETWOOD CHURCHILL, M.D., T.C.D., M.R.I.A. A new American edition, revised by the author. With notes and additions, by D. FRANCIS CONDIE, M.D. Philadelphia: Blanchard & Lea, 1857. 8vo, pp. 768.

THE reputation of Dr. Churchill as an author does not lie in the direction of original research. His contributions to medical literature, though very numerous, have only the merit of compilations. In this respect, however, they have a relative value, and fill a not unimportant place in the medical library.

The work on the *Diseases of Children* has been carefully revised by the author, and large additions have been made in the effort to incorporate the latest views of writers. As it was prepared especially for the profession of this country, the author has been at considerable pains to consult American medical periodicals. The present edition is much more full and complete than its predecessor, and will doubtless be received with additional favor.

Dr. Churchill's treatise on the *Diseases of Women* is, perhaps, the most popular of his works with the profession in this country. It has been very generally received both as a text-book and manual of practice. The present edition has undergone the most elaborate revision, and additions of an important character have been made, to render it a complete exponent of the present state of our knowledge of these diseases. Three entire chapters have been added on tetanus, paralysis, and arterial obstruction, as they occur during gestation, or in the parturient female.

ART. XIII.—*The Greatest of our Social Evils: Prostitution, as it now exists in London, Liverpool, Manchester, Glasgow, Edinburgh, and Dublin:* An Inquiry into the Cause and Means of Reformation, based on Statistical Documents. By A PHYSICIAN. London: H. Baillierre, 1857. pp. 344.

THIS work is based on the researches of Lèon Faucher into prostitution in Great Britain, and is replete with statistics. The subject is one of great interest to the medical philanthropist, and we shall recur to it again.

PART THIRD.

MEDICAL RETROSPECT.

PRACTICAL MEDICINE.

1. *Progressive fatty degeneration and atrophy of the voluntary muscles.*—In a recent paper (*Med. Times & Gaz.*) Mr. Leggett analyzed fifteen cases of this disease, and stated the results as follows :—

With respect to the brain : in six the brain was healthy ; in one the white substance was softened ; in one there was an osseous plate in the arachnoid. With respect to the cord : in six it was healthy ; in one partially softened without fatty degeneration ; in four the anterior roots of the nerves were not observed ; in one they were inflamed, softened, and atrophied, the cord also being inflamed and softened ; in one they were normal, while the cord was softened, but not inflamed. He thus considered that the disease in question was not of spinal origin in his own case, being persuaded that the softening of the cord was only of recent origin, and not the cause of the paralysis. He also regarded it premature to advance M. Cruveilhier's theory, that it consisted in atrophy of the spinal nerves at their roots ; but rather viewed the diseases as dependent upon depraved nutrition of the muscular system generally. In addition to wasting and want of power, M. Cruveilhier had described among the symptoms pain, twitchings, and cramps ; these are described in no other paper. In all, the general health was good, and the command of the sphincters complete. The prognosis as to progress and to recovery was always unfavorable. The treatment, of course, was tonic, with the use of galvanism. The author then, in conclusion, enumerated the causes, and grouped them thus :—1. Excessive muscular action and fatigue. 2. Severe illness, and utter exhausting influences. 3. Hereditary tendency (?) This seemed established in Dr. Meryon's and M. Aran's cases ; though, in the present instance, the author could not trace this as a cause.

2. *On the Prevention of constipation.*—Prof. Phœbus, of Giessen, gives the following directions (*Med. Times & Gaz.*, from *Prag. Viertaljahr*), in the treatment of constipation :—

"Numerous are the remedies which have been recommended for constipation ; but the action of medicinal substances in so chronic an affection may easily become prejudicial ; and especially such as exert a chemical or functional action, such as the salts or drastics. In the great majority of cases no other means are required than those indicated by the causes. The commonest of these is

the want of exercise in the large intestine. If a stool is desired, the patient must earnestly practice the necessary gymnastics, which consists in alternate movements of the rectum as during actual evacuation, and in rapidly drawing in and then expanding the abdominal muscles. Such movements may be commenced in the chamber and completed in the closet, several minutes, a quarter of an hour, or even more, being required. If evacuation has commenced, but has not proved productive enough, the movements must be continued, the person making a firm resolution not to quit the closet until the aim has been completely attained. The movements are, in fact, the same as those normally employed; but they are more rapid, and continued for a longer time. Kneading and rubbing the abdomen, recommended by some, are also useful, but as a general rule they are quite unnecessary, and may be reserved for those who are not able to follow the above directions, such as children, insensible persons, etc."

3. *Bromide of potassium in epilepsey.* By Sir CHARLES LOCOCK:—Some years ago he chanced to see a paragraph in the *British and Foreign Medical Review*, giving an account of some experiments that a German had been making with bromide of potassium. He found that by taking ten-grain doses three times a day for about a fortnight he became impotent, but upon leaving off the medicine his powers returned; he tried a similar experiment with others, and a similar result was produced. He accordingly thought he would try bromide of potassium in many hysterical cases that he met with unconnected with epilepsy, in which there was a great deal of sexual excitement and disturbance, attended with various distressing symptoms difficult to manage; and he found that from five to ten grains given three times a day had the effect of calming the excitement to a very marked degree. About fourteen months ago he was applied to by the parents of a lady who had had hysterical epilepsy for nine years, and had tried all the remedies that could be thought of by various medical men (himself among the number) without effect. She began to take the bromide of potassium last March twelvemonth, having just passed one of her menstrual periods, in which she had had two attacks. She took ten grains three times a day for three months; then the same doses for a fortnight previous to each menstrual period; and for the last three or four months she had taken them for only a week before menstruation. The result had been that she had not had another attack during the whole of the period. He had tried the remedy in fourteen or fifteen cases, and it had only failed in one, and in that one the patient had fits not only at the times of menstruation, but also in the intervals.—*Med. Times & Gaz.*

4. *On the employment of gelatinized chloroform.*—Dr. Massart, advocates (*Rev. de Therapeut.*) the employment of chloroform galatinized. This may be prepared in two ways, either cold or with heat;

by the former method, equal parts of chloroform and white of eggs are used, which being shaken together, acquire the consistency of collodion. When prepared by heat, one part of albumen, to four parts of chloroform, are employed. A large number of cases are reported, in which its external application by friction, proved very efficacious. They were principally neuralgic.

5. *Medical properties of elecampane.*—M. Desmartis, (*Rev. de Therapeut.*) recommends this plant in diarrhœa, and dysentery, especially in the diarrhœa preceding cholera. The method of preparing the decoction or infusion, is to add a large handful of the plant to a pint of boiling water. This plant contains an essential oil which may be extracted, and makes an excellent external application in colics.

SURGERY.

1. *Excision of the head of the femur in hip-joint disease.*—Dr. Kinloch, (Charleston *Med. Jour.*) reports a case of excision of the head of the femur in morbus coxarius, which terminated fatally. The patient was 20 years of age, and had suffered from symptoms of hip-joint disease, about two years. On exposing the joint, the disease was found to be very extensive, with a perforation of the acetabulum. A portion of the rim was removed with the head of the femur. The patient did not rally well, and sunk in about thirty hours.

Mr. Erichsen, in a recent clinical lecture, (London *Lancet*) discussed minutely, the pathology of hip-joint disease, and pointed out the class of cases in which excision is justifiable. He divided coxalgia into three varieties, *arthritic, femoral, and acetabular.* The first is characterized by the symptoms of acute articular inflammation. The joint becomes hot and swollen, is exquisitely sensitive, the pain being more severe than in other forms of arthritis. This variety occurs in young adults, and usually terminates in anchylosis without suppuration. Excision in these cases is not necessary. The *acetabular* form differs widely from this. In it the primary seat of disease is in the pelvic bones, the joint being involved secondarily. It occurs in adults, always goes on to suppuration, never to anchylosis, and is generally fatal. It commences with abscess in the iliac fossa, or at some point within the pelvis ; there is at first little or no pain, with no change in the length of the limb, excision is here impracticable. The third, or *femoral* form is where the head of the bone is primarily affected by caries, often of a tuberculous character. It occurs in strumous children, is subacute for a time, and is attended with the early formation of abscess ; it is in these cases that excision may be undertaken. The details of a case of excision are given, in a patient, æt. 7½ years, which promised good results.

2. *Resection of the elbow-joint, by a single long incision.*—The London journals notice an important modification of the operation of resec-

tion of the elbow-joint, practiced recently by Paget, Fergusson, and Erichsen, viz.: a single straight incision, instead of the H or I—incision, so generally practiced. This improvement is attributed to Langenbeck, and these surgeons were led to adopt it upon the representations of one of the German Surgeon's pupils. It is contended, in favor of this modification, that the lateral separation of the soft parts, thus afforded, gives ample space for the operation, while it leaves the bones much better covered, and the wound a much smaller one than would otherwise be the case. The "single long incision," is not, however, a recent improvement, as it was originally suggested and practiced by Park, in 1781. It is the method of excision of the elbow-joint, practiced by Drs. Buck, Post, and Van Buren of this city.

3. *Sympathetic inflammation of the eyeball.*—Mr. Walton remarks (*British Med. Jour.*), that the horse-doctor is in advance of the accomplished ophthalmologist in their knowledge of some diseases of the eye. It has been a practice among farriers, in certain ophthalmic diseases of the horse, to destroy the eye by suppuration, knowing well that the other eye, which is in great peril, could be saved by this means. Mr. Wardrop, taking advantage of this hint many years since, practiced evacuating the humor of the affected eye, and thereby relieved the sound organ from the dangers of a sympathetic inflammation.

4. *Inutility of depletion in syphilitic iritis.*—Mr. Hamilton in a clinical lecture (Dub. *Hospt. Gaz.*), condemns depletion in the syphilitic iritis. His practice is to give two grains of calomel, and one-fourth or one-eighth of a grain of opium, three times a day, till full salivation, in sub-acute cases; in the acute form, the same quantity every third hour. Where there are other symptoms, eruptions, etc., the mercurial action should he kept up for eight or ten weeks. When the mouth is affected the improvement begins, and rapidly progresses.

5. *Treatment of primary syphilis by preparations of iron.*—Ricord suggested the employment of potassio-lactate of iron in phagedenic chancre, and Mr. Acton recommends it very highly. Mr. Behrend (*Lancet*), believing in the essential identity of the virus of every form of chancre, and attributing the apparent differences to special circumstances, was led to employ this preparation of iron in the treatment of the common chancre. He reports the details of a number of cases thus treated, with the most satisfactory results. His method of administering the iron, is to make a mixture of one ounce to six, of which two tea-spoonfuls are to be taken three times a day. The local applications are simple.

MIDWIFERY.

1. *Rupture of the uterus—Escape of the fœtus into the abdomen—its gradual decay and final expulsion per anum—Recovery.*—Dr. W. Bryan reports (Phila. *Med. and Surg. Jour.*) the case of a lady who, in the

sixth month of her pregnancy, upon making a severe exertion, felt something "give way" in the abdomen. On examination, the fœtus was found in the left hypogastric region, still living. On the fourth day, the placenta and a small portion of the cord were discharged per vaginam. Her symptoms were of a doubtful character for several months, when the fœtus began to be discharged per anum. The entire expulsion was not effected until upward of two years, after which she recovered her health.

CORRESPONDENCE.

Anomalous vaginal tumors. By DAVID P. HOLTON, M.D.—[Communicated in a letter to the Editor.]—You are aware that in this city is the greatest concentration of Medical Lectures and Cliniques in the world.

From this multiplicity, detailed cases of great interest may be daily selected. In the service of Professor Schuh this day, May 6th, was a surgical case particularly worthy of report.

The patient, æt. 22 years, had had her regular menstrual symptoms, excepting the outward appearance of the flux.

Latterly, her monthly pains had become greater, and an uterine tumor, which had been gradually increasing for several years, was not difficult to diagnose as resulting from an accumulation of the menstrual fluid. The tumor was distinct and well defined in the position of the uterus, above the pubis, and also in the vagina, descending to within half an inch of the vulva, and somewhat protruding beyond the same, and by its pressure on the urethra presented an impediment to urination—one of the indications for an operation.

The patient had been prepared by a free passage from the bowels; and, being placed recumbent on the clinique table, the bladder was emptied by the use of the catheter. The point and direction of the proposed puncture were determined by the introduction of the index of the right hand, into the rectum, and one or two fingers of the left hand, in the vagina upon and around the projecting tumor; after which the canula and trochar in the right hand were directed on the index finger of the left, (which had not been removed from the vagina,) and the puncture was made. The trochar being withdrawn and the canula remaining, a dark reddish fluid flowed in small quantity.

To obtain a freer discharge, a grooved director was substituted for the canula, and in the groove a bistoury was passed with which the opening was suitably enlarged, when about half a pint of the said fluid was discharged. Still, the principal tumor above the pubis remained. In fact, the tumor already discharged was merely a vaginal tumor, separated from the uterine portion by a second membrane occluding the os uteri.

This second membrane was pierced with more difficulty, but essentially in the same manner as above described; when a similar fluid was discharged, apparently about one pint, which was in-

creased by suitable manipulations and external pressure on the uterus.

That which appeared peculiar in this case was the distinct division of the tumor into two sacs. I understood the professor to say that it was probable these two sacs were filled, the one by a menstrual secretion from the uterus, and the other by a similar secretion from the walls of the vagina ; but he did not say whether we might suppose them both simultaneously produced, or whether the latter was subsequent and metastatic.

VIENNA, May 6, 1857

Iodide of iron with glycerin. By JAMES C. LEAMY. — Glycerin has of late attracted considerable attention among medical men both in Europe and America, as a therapeutic agent, but more especially as a vehicle for holding well-known remedies in solution. It has until recently, only been used as an external application in several diseases of the skin, but now it is, from all accounts, rapidly laying claims to all of those virtues which cod liver oil once enjoyed. As a solvent for many of the salts now much employed, such as quinia and its salts, iod. of iron, proto-carb. of iron, ammon-citr. of iron, tannin, etc., etc., it has no superior ; and, in the language of a writer in the Edinburgh *Medical Journal*, there is strong ground for believing that glycerin will ere long supersede, in many cases, alcohol and syrup, as solvents or excipients in pharmaceutical preparations."

Dr. Wardner, of Chicago, published a paper some months ago, in which he says he had used a mixture of the syr. of iod. of iron and glycerin as a substitute for cod liver oil in phthisis, with the happiest effects. Being requested by a physician of this city to make him a similar preparation, I attempted to devise one and offered the following, which answered for the time :—℞ Iodine ʒ iv., iron wire q. s., glycerin ʒ iv., aqua dest. ʒ iv. Made in the manner directed for the officinal syrup, this was allowed to stand several days, when a copious precipitate was formed which, when shaken up, rendered the mixture opaque.

Not obtaining a satisfactory result in the above, I experimented further, and finally devised the following formula, which I have found satisfactory in every respect :—

℞ Resublimed iodine ʒ i.
Iron wire q. s.
Glycerin (Price's) ʒ x
Aqua dest. ʒ i or q. s.

Mix the iodine with the water in a porcelain capsule, and gradually add the iron wire, stirring constantly. Heat the mixture, until it acquires a light greenish color, then filter the solution into a capsule containing six ounces of the glycerin, taking care to keep the end of the funnel under the surface of the glycerin, then place the capsule containing the filtered solution and glycerin on a water bath and evaporate it down to six ounces, add this to

the remaining four ounces of glycerin previously placed in a twelve-ounce bottle,and shake well together.

This preparation is of a pale straw color, ferruginous but not unpleasant taste, entirely free from sediment, and will keep any length of time with ordinary care. It is precisely the same strength as the officinal syrup, the dose therefor being the same. I attribute my failure in the first instance to the glycerin I used. To satisfy myself one pound was evaporated until it ceased to lose weight, it was then treated with sulphuretted hydrogen which indicated the presence of lead; the specific gravity after evaporation was 1.260; about what it should have been when purchased.

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*First case of successful administration of amylene in this country.** By JOHN GAY ORTON, M.D., Binghamton, N.Y.—On June 20, 1857, I administered this new anæsthetic agent to a female patient, 28 years of age, of a plethoric habit, and healthy constitution. With my patient lying upon her back, and every restraint likely to impede the free action of the chest, I gave her, with the aid of the improved French inhaler, ʒiij of amylene, admitting a free access of atmospheric air into the instrument. In about two minutes, *complete insensibility* was effected. She inhaled it freely, without any inclination to coughing or strangulation. The eyes were not closed at any time during the operation, but she seemed to amuse herself with an examination of the apparatus. She answered questions put to her with considerable promptness, and in fact, conversed with my assistant during the period of insensibility. Just as I was about to perform the surgical operation intended, the flexible tube with mouth-piece separated from the inhaler, and before I could adjust it my patient had completely recovered her usual sensation.

In about ten minutes I repeated the inhalation, and succeeded a second time in accomplishing insensibility in the same time as before, and with the same quantity of amylene. During this latter stage of anæsthesia, I removed the larger nail from an extensively diseased, and highly sensitive toe. I did not split the nail, as is usual, but losing no time, thrust one blade of my forceps underneath the nail and tore it from the toe, an operation likely to give the patient *some* pain, if not fully protected by the anæsthetic. She manifested not the slightest uneasiness whatever, and was not aware that the nail had been removed when she recovered sensibility. The pulse was but slightly accelerated, pupils natural, no coldness of the extremities, no headache or vomiting succeeding the administration, in short, not a single unpleasant symptom manifested itself, either during, or following, the operation.

There are several points of interest in this case, worthy of remark:—

1. The comparative ease with which anæsthesia was produced, and the small quantity of amylene required.

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* Read before the Binghamton Academy of Medicine, July 7, 1857.

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Various attempts have been made in different parts of the country, to produce anæsthesia, with what has been supposed to be Amylene, but in every instance, at least in every one yet recorded, complete failure has followed the undertaking. I am decidedly of the opinion, that the samples which have been used heretofore, were not specimens of amylene, but chemically different from that used in Europe.

The article used in my experiments, was sent me from London, through the politeness of Dr. Snow, of King's College Hospital ; it was from the Laboratory of Bullock and Reynolds, 15 Hanover Sreet, Hanover Square.

In a letter lately received from Dr. Snow, he states that he has administered amylene in one hundred and eighty-two cases, with but a single instance resulting unfavorably, and that, consequent upon organic disease of the lungs and heart, as the post-mortem examination attested. The case which I here report, is simply of interest on account of its being the *first recorded instance* of the *successful administration* of amylene in this country, and in its re-establishing its efficacy as an anæsthetic agent.

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This opinion was strengthened from the fact that the patient gradually improved up to the twentieth day after the accident ; the pain and stiffness of his neck had disappeared, so that he could roll his head from side to side with freedom, and without pain ; he had recovered the use of his arms and wrists, so that he could move them in all directions without difficulty, but the paralysis of his fingers still remained ; sensation returned in his legs, so that he could feel the slightest touch, and twitchings could be excited in them by pinching the toes, or titillation on the sole of the foot ; this would also come on occasionally without their being touched. The intellect was clear ; the skin natural ; the pulse regular ;

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Such was the condition of our patient when we saw him on the morning of July 1. At noon of the same day we were summoned hastily to see him, and were surprised to find him in a dying condition. He had been moved a few minutes before from a lounge, where he had been lying, on to his bed; immediately after this, he complained that his attendants had "wrenched his neck, and that he felt blind." When we saw him, he was almost pulseless, his skin was cold, and respiration was performed with great difficulty; under the use of stimulants, he was aroused for a few minutes, and then sunk again, and, after a few paroxysms of this kind, he expired, two hours after having been moved, and on the twentieth day after the accident.

We then confidently expressed the opinion, which we had not before entertained, that one or more of the vertebræ were fractured, and that the motion which he had been subjected to had so disarranged the fragments as to cause some pressure upon the spinal cord.

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TIMOTHY DALY,
Warden Bellevue Hospital.

NEW YORK, October 15, 1857.

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The Fall Course will commence on Monday, 21st September, and continue until the opening of the Regular Course in October; this course will be *free* to the Matriculated Students of the College. There will be two Surgical and one Medical Clinique, also a Clinique on Diseases of Females, and one on Venereal and Skin Diseases, every week throughout the Fall and Winter Courses.

Lectures will be given in the Fall Course by Professor Watts, on the Anatomy of the Heart and Arteries; Parker, on Aural Surgery; Dalton, on the Physical Forces of the Circulation; St. John, on Geology; and by Drs. Bumstead, on Venereal and Skin Diseases; Acosta, on Surgical Subjects; and Sands, on the Surgical Anatomy of the Head and Neck.

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Austin W. Nichols, M.D., Demonstrator of Anatomy.

Edward L. Holmes, M.D., Assistant in Department of Clinical Medicine.

Fees.—Including Matriculation and Hospital Tickets, $75. Demonstrator's Ticket, $5. Graduation Fee, $20. For further information address.

Thomas F. Rochester, *Dean of the Faculty.*

Buffalo, 1857.

6—2

MEDICAL INSTITUTION OF YALE COLLEGE.

The Course of Lectures for 1857–8, will commence on Thursday, September 17th, and continue four months.

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Eli Ives, M.D., Prof. Emeritus of Materia and Therapeutics.

Jonathan Knight, M.D., Prof. of the Principles and Practice of Surgery.

Charles Hooker, M.D., Prof. of Anatomy and Physiology.

Henry Bronson, M.D., Prof. of Materia Medica and Therapeutics.

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Benjamin Silliman, Jr., M.D., Prof. of Chemistry and Pharmacy.

Pliny A. Jewett, M.D., Prof. of Obstetrics.

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New Haven, May, 1857.

6—3

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WM. SWEETSER, M.D., Prof. of Theory and Practical Medicine.
MIDDLETON GOLDSMITH, M.D., Prof. of Surgery.
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CORYDON LA FORD, M.D., Prof. of Anatomy and Physiology.
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ADRIAN T. WOODWARD, M.D., Prof. of Obstetrics.

FEES.—For Lectures, $50; for those who have attended two Courses at other Colleges, $10; Matriculation, $5; Graduation, $16; Board from $2 to $2.50 per Week.

A. T. WOODWARD, M.D., *Registrar*

Castleton, Vt., June, 1857.

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